Cardamom

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NOVEMBER - DECEMBER 1978

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CARDAMOM

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K. P. Sreeranganathan

Editorial

PRESERVE SOIL MOISTURE

Cardamom is a shade and moisture loving plant. Deforestation of the western Ghats over the years, have adversely affected the environmental ecology of cardamom plantations. Also the cardamom plant is easily susceptible to the vagaries of nature. An equitable distribution of rainfall throughout the year largely influence the lush growth of the plant and the production of cardamom. But one cannot expect this natures bounty to shower its blessings throughout the cardamom tracts. A study of the cardamom production during the past few years also indicate that there is a positive correlation between yield and rainfall pattern. Production has been very good during those years when there were evenly distributed rainfall and the same has been low during the years of delayed and scanty rain.

Drought of 3 to 4 months experienced every year is another factor which is to be reckoned with in cardamom plantations. Since the root system of the plant is confined to the surface soil it is highly prone to conditions of soil moisture. It is in this context, that soil moisture preservation in cardamom plantations is felt to be of prime importance for increasing the production of cardamom. It is essential to adopt such measures as irrigation and other agronomic practices enabling the plants to withstand the scorching sun during the summer. Wherever water sources are available, it should be fully exploited for irrigating the crop. Irrigation may not be feasible in many plantations due to non-availability of a perennial source of water. In such plantations it is necessary to adopt other measures for the conservation of soil moisture.

The Board has always been giving greater stress to measures, which would enable the crop to withstand the drought. Of these measures, greater importance was given to such operations that would help maintain a congenial micro-climatic conditions in the plantations. They include minimal tillage, mulching, shade management, sprinkler irrigation etc. A facility available to the planters from the Board in this context, is the hire purchase scheme for installing sprinkler irrigation equipments. However, large scale adoption of irrigation may not be possible in many of the plantations due to non-availability of water sources. Considering this, the Board is now undertaking a ground water survey to explore the possibilities of utilising ground water for irrigation in cardamom areas.

The advent of summer months is not very far off. Let us channalise our efforts and equip our plantations to counteract the ill-effects of drought. Let us preserve soil moisture. □

THERE IS NEED FOR BOLD GESTURES

S. G. SUNDARAM

Having addressed the UPASI Conference in September 1976 on the subject of cardamom, I am no stranger to you. We are fortunate in having with us today, the Chairmen of the Tea and Coffee Boards. It gave me the opportunity to hear, for the first time, in-depth dissertations on these two commodities. My distinguished seniors have already covered most of the vital points that concern the plantation industry. I would, therefore, like to confine myself to some of my thoughts on cardamom.

We, in Cardamom Board, have for quite sometime been working on a price strategy for cardamom. We addressed to ourselves the question "why not have a change instead of going in for routine growth programmes for achieving a five or ten per cent growth rate?" On examining the cardamom scene in 1975-76 we realised that a structural change had been taking place in the world cardamom market. The Middle East was, at that time, holding the world to ransom with their oil weapon. We discovered that we, too, had a weapon in cardamom. The per capita consumption of cardamom in the Middle East is about 250 gms. compared to two gms. in India. In terms of aggregate consumption, the intake in the Middle East is twice as much as in India. Cardamom is a special weakness of the Arabs who cannot live without it.

Arabs are not permitted to take alcoholic beverages on religious grounds. They, therefore, drink a concoction of cardamom and coffee, called Gahwa, with equal proportions of cardamom and coffee. They drink this decoction throughout the day except during Ramzan when they drink it at night. Gahwa is a status symbol in the Middle East. The higher the proportion of cardamom to

Shri. S. G Sundaram speaking at the UPASI Conference, also seen in the picture from L to R :- S / Shri. V. I. Chacko, adviser, UPASI; B. Somanna; C. Prabhakaran, President UPASI; Dr. K.T. Chandy; B. K.Goswami, Chairman, Tea board; M. Venkataratnam, Chairman, Coffee board.

Text of the speech delivered by Shri S. G. Sundaram, Chairman Cardamom Board at the 85th UPASI Annual Conference, Coonoor on 12 September 1978.

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coffee in the drink, the greater is the prestige that accrues to the person who offers it to his guests. With the steady inflow of oil revenues, the poorer Arabs have begun imbibing the habits of the higher echelons with the result that the demand for cardamom is rising rapidly.

When the Arabs came into the market in October / November 1976, we held back on our sales of cardamom. There was almost a battle till the early part of 1977. For about four months, there was no cardamom in the market, with both traders and planters co-operating in the process. Let me discuss the matter here to give you an indication of the system of trading in cardamom. Planters sell their cardamom to traders without receiving immediate payments. I use the word 'trader' because cardamom is still traded; there isn't a developed marketing system. Most traders are brokers, buying cardamom from any source and then trying to export it. They work for margins of two to three per cent. But the turnover is quick.

At that time, the price of cardamom stood at Rs. 90/- per kg. We felt there was scope for doubling it to the range of Rs. 160/- to Rs. 180/- per kg. Unfortunately, in the early part of January 1977, the Central Government clamped an export duty of Rs. 50/- per kg. on cardamom. As a result, our entire attempt collapsed.

Since payments were still pending, we found the outstandings were running into crores of rupees. Credit was not flowing in. Banks were chary of giving credit to the foodgrain trade, especially after the Tandon Committee report on banking The traders and planters, therefore, withheld their cardamom from the market in a gesture of protest. Exports were at a standstill After 45 days, the duty was reduced to Rs. 10/- per kg. and it was only then that normal trading was resumed.

I would now like to refer to my earlier career in the Punjab. The then Chief Minister decided and announced the State's intention of doubling wheat production within two years. He felt all his officers should be trained for the challenge.We were, therefore, sent on a 15-day crash programme after which we adopted villages, popularising the theme "double production". We did achieve a 15 per cent increase in production but, what is important is that we all got into the spirit of the challenge which goes beyond mere statistics.

We are adopting a similar strategy for cardamom. Our aim is to double production but the approach will be indirect. I dont suppose we need any extra allocation or resource from the Government. What we really need, it seems to me, is a price incentive. The Punjab Chief Minister had utilised a similar price incentive in his strategy, announcing a support price higher than the national average.The price factor is, therefore, important. Whether a planter is a small grower or a large grower, his interest in increasing production will be aroused if the price is right. He will then see to it that each flower of the plant comes out with a capsule of cardamom and will go in search of the relevant technologies for achieving this objeetive.

The effect of prices and land value is also reflected in the change in the ownership pattern of cardamom lands. Initially, when land values were low, land owners who inherited their lands from their fore-fathers were absentee landlords. living in cities. They did not invest much money in their land, thus getting meagre income of around Rs. 200/-per acre. Their managers had to put up with a low level of technology because of the lack of finance for additional inputs. With the substantial increase in the value of cardamom lands, the new owners are no longer absentee landlords. They personally manage the land, whether they are individuals or companies, and have thus acquired the necessary managerial experience. That being so, I am confident of doubling production without the need for extra resources or for western concepts of management and technology.

I wish now to go to another problem/soil and moisture conservation. In Kerala, a land of abundant rains, the loss of soil fertility is becoming a matter of grave concern. Fertilizers are no means for improving the organic content of soils. At one time, all this land must have been forest land. I am reminded of the saying that a forest is a great reservoir. How true this saying is! Forests have an inbuilt equilibrium, removing underground nutrients but replacing them with their falling leaves. By cutting down our forests, we have affected wind movements and soil temperature, thus affecting the quality of our soil. It is fortunate that areas like Idukki are still under forest. Instead of razing our forests to the ground, we should plan for their development. Cardamom is a shade-loving plant. It could thrive in forests, drawing its

nutrients from the continually renewing organic matter of these forests. The Government is also thinking along such ecological lines.

A word on marketing. We, in the Cardamom Board, are fully aware of the problem in Karnataka where prices were at a relatively low level. They have since moved up to around Rs. 150/- per kilo, making the price level not too different from that for Kerala cardamom. The price differences between the two result from customer preferences. The Coorg or Saklespur cardamom of Karnataka differs in taste and appearance from Alleppey Green of Kerala (Alleppey does not produce cardamom but was the port town for shipments). Thus Saklespur cardamom caters to the internal market while Alleppey Green is exported, accounting for the differences in price. In fact, even in the Alleppey variety, the bold green grade fetches a 10 per cent higher price.

We should concentrate more on cardamom curing for getting better prices. The Central Food Research Institute at Mysore is collaborating with us and I would like UPASI to take an interest in the matter. We need an inter-disciplinary approach. For example. Guatemala has done sterling work in curing, taking lessons from another commodity–tea. A forum of technical people, like the one present now, could provide the needed exchange of ideas for the development of all commodities. □

"Water is Good"

"Water is good" say the Upanishads, but like all truths, this one too has a deeper meaning besides the obvious one. It is said that man invented or at least discovered fire and, in Greek mythology, Prometheus had to suffer the wrath of Zeus and bear terrible punishment because he helped mere mortals to break the monopoly of the Gods in this element. Earth itself is said to have taken shape out of water and the origin of life is stated to lie in the primal slime. Even the sky would have had nothing to hang over except the void had there been no water and what flowed from it. In this sense or in this way water is good, for it is not only life, but also more than life itself.

This is the obvious meaning of the saying of the Upanishads. The more complex truth is that, like everything else that works on man or on which man works, water is good only when men have become wise to its ways and have developed the skills for making good use of it. This is a lesson which the human race has been learning over and over again in many lands since the day when the universe ceased to be a total mystery even to the primitive mind. This year's floods, the worst in living memory in some parts of Northern India, remind us once more that while water is good, the goodness of water cannot be taken for granted. There is of course an endless argument among experts on whether floods are in their net effect or ultimate result more baneful than beneficial or the other way about.

As against all this, certain harsh realities must be counted. Where the floods are caused by man's foolish exploitation of the environment, resulting in the deforestation of hills, soil erosion in the catchment areas of great rivers, silting of river bases and other storage capacities and above all by his failure to co-ordinate irrigation works with the drainage needs of river systems, it is impossible to consider the wrathful waste of waters as they rush over the habitations of men towards and into the seas as anything but a man-made disaster. Especially in a country such as ours, so largely at the mercy of variable monsoons, floods of large dimensions cannot but be regarded as man-made disasters.

— Eastern Economist

Conservation of Soil Moisture In Cardamom Plantations

P. K. ZACHARIAH*

Drought is one of the major problems confronting cardamom plantations. In certain areas about 5 to 6 months of drought is experienced. Therefore, it is necessary to take effective measures which would help the crop to withstand drought. Irrigation is not possible in many cardamom plantations because of the non-availability of perennial source of water. It becomes, therefore, necessary in majority of the plantations to take measures for the conservation of soil moisture.

The measures recommended for the conservation of soil moisture in cardamom plantations are the following:-

1. MULCHING:

The need for protecting the tropical soil from the destructive forces of nature is much more than that is required for soils in temperate regions. In tropical regions the rains are very heavy which can impoverish the soil very much by erosion and other causes. During summer season the earth is heated up very much. Chemical reactions will be accelerated at high temperatures resulting in the loss of soil fertility. Therefore, it is necessary to adopt agronomic practices that will help in protecting soil during rainy season and from the sun during summer seasons. As far as possible, soil should not be exposed. There should be something to cover the soil. Under field conditions it is difficult to obtain adequate quantities of mulch materials to give proper coverage to soil in many crops. Fortunately, in cardamom plantations there is no dearth for mulching materials. The mulch materials available from the leaf shed of shade trees and those obtained during weeding and trashing could be profitably utilised for mulching the soil. In cases where there is scarcity for mulch materials, it is necessary to see that at least the plant base is adequately mulched. The interrow areas should also be given at least a thin layer of mulch. Otherwise in summer season the temperature in the interrow areas will increase. With the increase of soil temperature, the temperature of the atmosphere immediately above the soil will increase which would adversely affect the crop and deplete the soil moisture rapidly.

In mulched plantations, the soil remains protected from the beating action of the rain and baking action of the sun. Microbial activity in such soil will be enhanced and the fertility of the soil increased. The soil will become more friable and porous. The soil moisture will not be lost by evaporation under mulching. As a sponge absorbs water, mulch will absorb water for the soil beneath. The overall improvement of the soil as a result of mulching will help in better percolation and absorption of rain water into the soil body.

2. WEEDING:

Soon after North East Monsoon, weeding should be completed. If weeds remain in the plantation, they will rapidly deplete soil moisture. All around the cardamom clump to a radius of about 60-90 cm, the weeds may be pulled out and the plant base mulched adequately. It is better to do sickle weeding in interrow areas. In large plantations, chemical weeding is recommended only in interrow areas.

3. MINIMAL TILLAGE:

In many cardamom plantations excessive tillage practices are followed. Excessive tillage practices can cause damage to the soil. Fertility and the physical condition of the soil will sink. As a result of this, the ability

* Soil chemist, Cardamom Board

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of the soil to absorb and store moisture during rainy season will be reduced considerably. Since the organic matter level of the soil is lowered due to excessive tillage practices, the soil becomes less friable and the efficiency of the soil in absorbing water during rains is lowered. Therefore adoption of minimal tillage practices is of great importance in improving the cardamom plantations.

4. CONTOUR PLANTING

Contour planting on slopes will help to some extent in conserving soil moisture.

5. SHADE TREES:

There is now a tendency to reduce shade drastically in cardamom plantation. Under low shade the temperature of the atmosphere in the immediate neighbourhood of the plants will be higher than under adequate shade conditions. This affects cardamom plants adversely and also accelerate the depletion of the soil moisture. Therefore, there is no need for emphasising the importance of maintaining adequate shade conditions in cardamom plantations.

6. WIND BREAKS OR SHELTER BELTS:

One of the biggest problems in maintaining a steady yield in the cardamom plantations is the deterioration of the micro-climate in plantations during summer season as a result of the hot wind coming from plains. The hot winds not only change the micro-climate in the cardamom plantations but also dry up the soil rapidly. Therefore, it is necessary to provide adequate wind breaks or shelter belts in areas where wind is a serious problem.

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TRICKLE IRRIGATION--

NEW HOPES TO CARDAMOM PLANTATIONS

K. R. KURUP*

Any cultivated crop responds to irrigation. This has been established through decades of trials and studies conducted all over the world. Cardamom is not an exception. Every planter knows it. But there are several limitations in making irrigation economically feasible in cardamom plantation areas. The reasons are many. Most important among them are:

1. Limited availability of water during summer.
2. High cost of installation of irrigation equipments; and
3. Difficult terrain where usual irrigation methods are not practical.

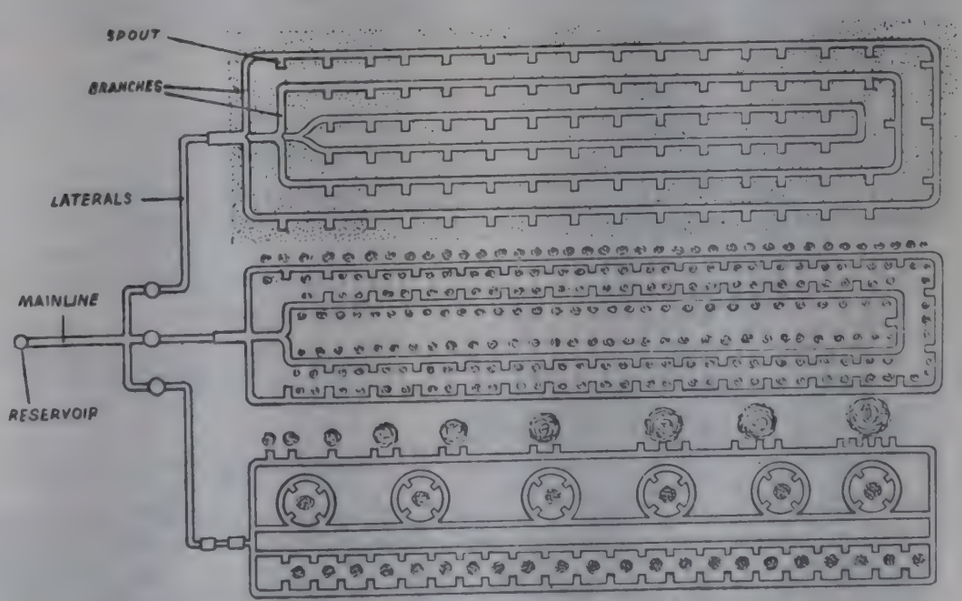
As a result of acute drought, many plants in exposed areas of cardamom plantations dry off every year. Filling up these gaps have become a routine operation in many a plantation. How to save these plants from the scorching sun and assure better returns to the planter? This had been a cause of permanent worry both to the extension workers and the planter's community. Providing irrigation through sprinklers wherever possible, through weeding and mulching of plantations during the post monsoon period etc., had been some of the practices recommended to tide over this drought in most of the plantations. Some farmers have successfully tried sprinkler method of irrigation while in some other plantations this has led to problems. Mulching has, to a certain extent, been found to lessen the adverse impact of drought in cardamom plantations.

With the introduction of financing schemes for the installation of irrigation equipments, cost is not a limiting factor to the planters these days. But now the limiting factor is availability of water. What to do in areas where water is not available even to work a sprinkler? All our efforts in this direction should, therefore, be aimed at minimising the requirement of water for irrigating cardamom plantations. So the irrigation system recommended for cardamom plantations should be cheap, efficient and water saving. Drip Irrigation popularly known as Trickle Irrigation, is a possible answer to these problems and so is felt to be worth trial at least in selected plantations.

WHAT IS TRICKLE IRRIGATION?

When we speak of irrigation, the first impression that strike us

Various methods of arranging spouts in trickle irrigation



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the flooding system, usually llowed in paddy fields or the rrow system or the basin system llowed in coconut, arecanut nd banana plantations. These e methods used by our farming mmunity for the last several nturies. There is much wastage f precious water in all these ethods and so the efficiency of ch system is strikingly low.

With the introduction of modrn technology, sprinklers have placed the furrow irrigation and ooding systems. But due to the igh initial costs involved, its pplication is limited only in reas where water is scarce and lso in difficult terrains when uch conventional methods are ut of question. In all these onventional and modern methods here should be a continuous upply of water from the source o the field either through pres-ure or through the force of gra-ity. But Drip Irrigation or Tri-kle Irrigation is a method in vhich we enforce maximum eco-omy in water use and irrigate he plants only by drops.

ORIGIN:

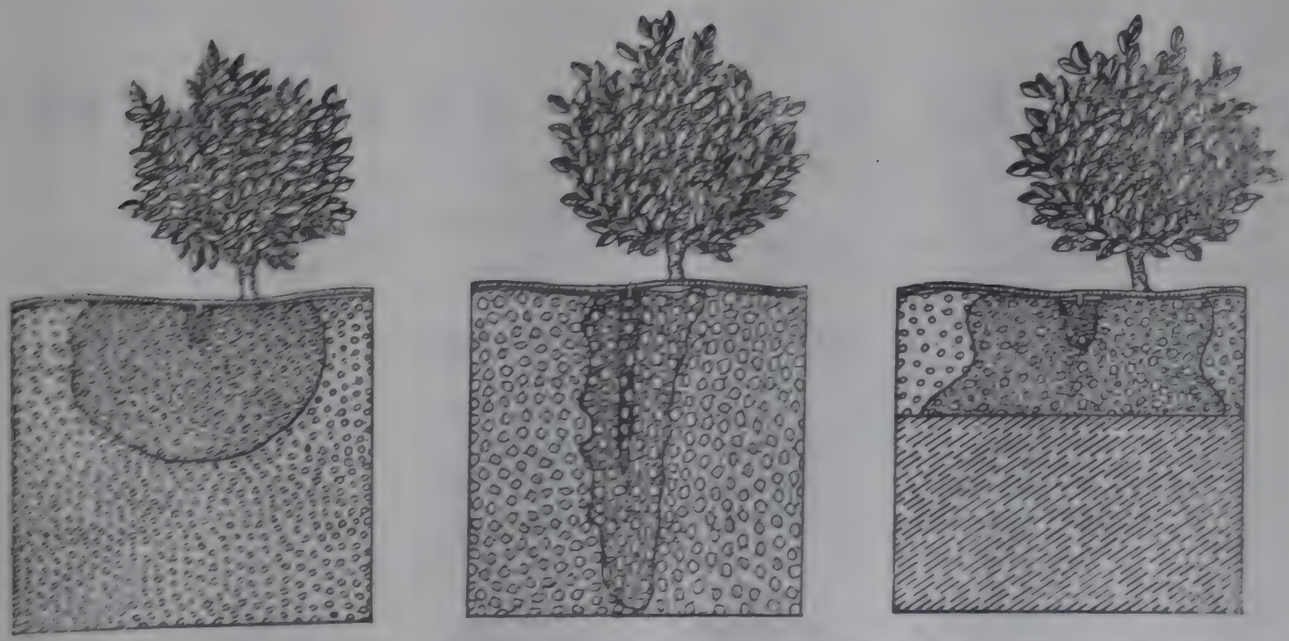
The basic idea behind Trickle Irrigation is traceable back to 1860's. In Germany, farmers used clay pipes with open joints 0.8 metres below the soil for draining as well as irrigating the soil in places where there were very wide variation in water level between seasons. By 1930, farmers in Australia used similar technique in irrigating peach orchards. They used 5 cm galvanised iron pipes with holes on sides for supplying water to plants. It was in the latter part of 1930's when Trickle Irrigation was developed as commercially feasible method.

Symcha Blass, an irrigation expert of Israel noticed a tree growing near a leaking tap exhibiting better growth than other plants not within the reach of the water sources. This observation led to the development of an irrigation system which later got the name Trickle Irrigation. The method was refined by his successors and has now become internationally accepted as an efficient system of irrigation with maximum water economy. This system feeds the plant with water literally drop by drop and hence the name.

It is estimated that Drip or Trickle irrigation will be in practice in an area of 3,50,000 ha by 1980. Now this system is widely followed in countries like U. S. A., Australia, Israel, South Africa, Mexico and Canada and to a limited extent in Cyprus, France, Iran, New Zealand, U. K. and some countries of the west Africa.

HOW MUCH WATER A PLANT REQUIRES ?

There is no necessity of flooding the soil with water for maintaining a healthy plant in the field. The minimum quantity of water required by a plant would be the same total of the amount of water transpired from the plant, lost by evaporation from the soil in the root zone and the minimum quantity of water required for washing out the unwanted salts



Soil around a spout in trickle irrigation showing areas of wet and moist soils. Fig. 1 Loamy soil Fig. 2 Coarse soil Fig. 3 soil with a hard pan below.

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from the root zone. If we can supply just this limited quantity of water to the plant, then we can make maximum use of the water available. This is the basic principle behind the development of Trickle Irrigation or Drip Irrigation.

FEASIBILITY IN CARDAMOM AREAS :

Most of our cardamom areas are on sloppy grounds along the Western Ghats. Availability of perennial water sources in plantation areas is very limited. Even if such sources are available, the volume of water required for irrigating large extent even through sprinkler will be too much, making it impossible to cover the entire area during the summer months.

HOW TO PUT TO PRACTICE ?

Several designs of Trickle Irrigation systems are available in developed countries. Such designs use safety valves, pressure chambers etc. for assuring a continuous flow of water. Some of the potential designs are more and more sophisticated making all operations automatic based on the moisture level in the soil. These ready to use systems are costly ones and are not adaptable in our region. Such systems are mainly used in deserts or plain lands where artificial pressure is required to force water through small outlets. A cheaper but efficient system suitable for our region is to be worked out. Preliminary trials with such a low cost Drip Irrigation method conducted by the Kerala Agricultural University have been found to be promising. Results of the Tamilnadu Agricultural University also have indicated the efficiency of the system. These indications lead us to the inference that Trickle Irrigation would be a more feasible irrigation system for cardamom plantations in the high ranges.

ADVANTAGES :

Drip or Trickle Irrigation has got certain definite advantages over other systems of irrigation. Most important among the advantages are :

1 MINIMUM LABOUR :

Unlike in other systems Drip Irrigation requires minimum labour. Once the tubes and the spouts are arranged in the field, then the maintenance is very cheap and simple. So a lot of expenditure on labour can be saved in this method

2. SAVINGS IN INVESTMENT :

Drip Irrigation requires only very cheap materials such as PVC pipes and tubes from the laterals to the base of the plant. A motor and pumpset and a high level tank with the main pipe with facilities for regulating the flow of water to the lateral tubes completes the equipment required for the system. The initial expenditure on PVC tubes required for providing an outlet for every square metre of the ground has been worked out to be from Rs- 3,500-4,500 per hectare. Since cardamom plants have a wider spacing, this expenditure will be still less when Drip Irrigation is introduced in cardamom plantations.

3. MAXIMUM IRRIGATION EFFICIENCY :

The efficiency of flooding system of irrigation is only 40-50% Sprinkler irrigation has got an efficiency of 70-80%. But Trickle Irrigation has been found to be the most efficient system with an irrigation efficiency of 80-95%. The efficiency of Trickle Irrigation is rated to be highest as it supplies only the minimum quantity of water required by the plant and there is no wastage of water through evaporation percolation, leaching or run off. As a result of this high rate of efficiency of the system, the available water can be put to maximum use.

4. EFFICIENT USE OF FERTILIZERS:

It is possible to apply fertilizers also to plants through this system. The fertilizers can be supplied to the plant at the root zone and hence, maximum advantage of the fertilizer used can be taken.

5. EARLY MATURITY AND HIGHER YIELDS FROM PLANTS:

The moisture level of the root zone of the plant is maintained at an almost constant level. This eliminates the moisture stress in the soil in between irrigations in the conventional practice and also between seasons. A constant level of moisture in soil enables the plants to have a uniform growth throughout the field. The plants come to maturity earlier than in other fields and other irrigation practices and give a steady higher income.

6. CONTROLLED WEED GROWTH:

Weed growth is controlled to the maximum as moisture is not supplied in inter-row areas. As

such, expenditure on this item of work is also reduced.

7. LOWER DISEASE AND PEST INCIDENCE:

In this system, sufficient moisture is supplied to the root zone of plants without actually wetting the foliage. This eliminates pest and disease attacks on plants as in other systems.

DISADVANTAGES:

Drip Irrigation is not without disadvantages. It has got some inherent defects as observed in present practice. A suitable rate of flow per plant and mechanism for assuring a uniform flow all along the slopes in cardamom plantations will have to be worked out from experience. The most important limitations of the system are:

1. CLOGGING OF THE OUTLETS:

The most important problem with this system is the frequent clogging of the capillary tubes of clean water. This is a very serious limitation. The tubes will have to be inspected frequently and continuous flow of water assured. This requires only minimum labour unlike in other systems. Since the water tubes are laid only on the soil surface, it is easy to detect the clogged points and to rectify the defect.

2. UNSUITABLE FOR CLOSELY SPACED CROPS:

As we have to provide individual outlets to each plant, this system cannot be adapted to closely spaced plants like cereals or pulses.

3. DAMAGE CAUSED BY ANTS AND RODENTS:

It has been found from experience that ants and rodents do considerable damage to the PVC pipes laid in the field. Such damages, unless traced out and rectified immediately, will cause wastage of water. Replacement charges also will be more if the damage cannot be controlled.

On weighing the advantages and disadvantages of this system, it is felt that the Trickle Irrigation or Drip irrigation is a method worth trial in cardamom plantations. ●

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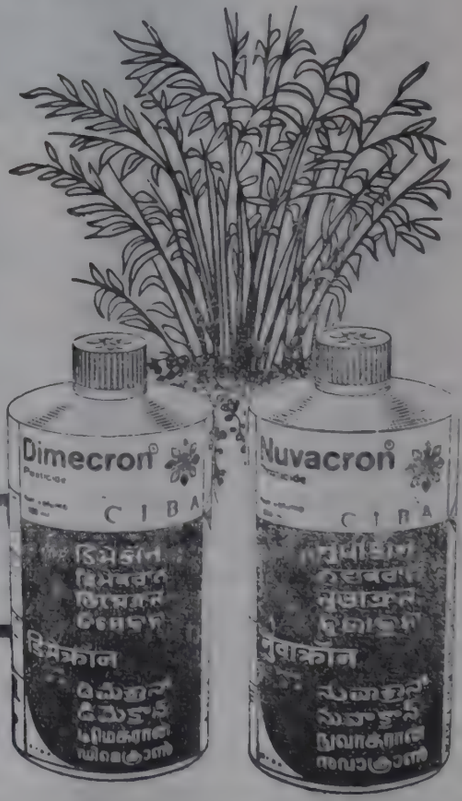

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CG/CM/77

"Sprinkler Irrigation Doubles Cardamom Yield"

Says Shri C. V. Paul

Cardamom is a very sensitive crop. Its natural habitat is the ever green rain forests of the Western Ghats in South India. With the large scale deforestation of theWestern Ghats rainfall pattern has been changed and drastic changes have taken place in the environmental conditions of the cardamom tracts. Drought has become a very major problem in cardamom plantations. Therefore, for developing the plantations it is necessary to adopt such measures as irrigation, and other agronomic practices which will enable the crop to withstand the drought. It goes without saying that wherever water facilities are available it should be fully exploited for irrigating the crop. Among the different irrigation methods only the sprinkler irrigation has been found practical in cardamom plantations. It is the experience of the planters that wherever sprinkler irrigation is adopted the yield has improved substantially.

Mr. C. V. Paul, owner of the Waterfall Estate in Kallar is one of those planters who have realised the advantages of sprinkler irrigation as back as in 1973.

Since cardamom is grown on hill slopes with undulating topography, sprinkler can provide uniform water supply. Fields can be irrigated without excessive loss of water as the rate of application of water can be well regulated with sprinklers.

The Waterfall Estate situated at an elevation of 1000 meters above MSL has a total extent of about 21 hectares located in Kallar - Vattiar, by the side of the Alwaye-Munnar Road in Pallivasal Village, Devicolam Taluk. Eventhough, Mr. Paul was in the cardamom trade before long, he took to plantations in the late 60's. From then onwards he had been taking good care in maintaining the estate properly by carrying out various field operations recommended by the Board timely and systematically. Regular spraying of insecticides and fungicides to control pests and diseases, weeding thrice in an year, trashing, manuring and shade regulation were well carried out in time as per recommendations.

The sprinkler irrigation unit was installed in the estate of Mr. C. V. Paul during 1973 with the assistance of the Cardamom Board at a total cost of about 1.00 lakh. The entire irrigation system works on gravity. The Kallar river which runs by the side of the estate is a perennial source of water to the plantation. Water from the river is pumped upto a height of about 50 meters using a 25 HP motor to a storage tank with a capacity of 375000 litres located at the highest point of the estate. The irrigation system with 18 sprinkler heads when operated for 5 hours would irrigate 0.75 hectare with water equivalent to 3.8 cms of rainfall. There is also another booster pump of 10 HP with which sprinkler is operated at an area of 8 hectares.

In the Waterfall Estate sprinkler irrigation normally starts after December or after fifteen days of the last rainfall Irrigation continues for a period of about four to four and a half months at the interval of every ten days.

Did the sprinkler really help him? Mr. Paul could not even imagine the plight that his estate would have been in but for the

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sprinkler unit. The reasons were many. Just a year after installation it so happened that there was total deforestation on the western and southern sides of his estate. Further on the east side was the open area leading to the Alwaye-Munnar road. Clearing of forests on two sides and the open area on the other would have culminated in the total destruction of the plantation in the changed environment. Mr. paul has no regret in having invested such a huge amount on sprinkler when none in that area ventured to do so against such odds as non-availability of electricity, investments etc

One cannot find another planter who has so much faith in the wonder-work of the sprinkler. Ask him about the yield. He would say that it has doubled. Not only the yield, but the total appearance of the plantation also has changed. Lush green and healthy plants have replaced the unhealthy, half-starved old cardamom plants. Before the installation of the sprinkler, the yield per hectare was only 60-75 Kgs. Now it has doubled to the tune of 120-150 Kgs. per hectare. There has not been any great fluctuation in production. Mr. Paul feels that the yield would have been even more if there were no deforestation in the adjacent areas of his plantation.

After the installation of the sprinkler replanting of the plantation was carried out in a phased manner. 4 hectares were replanted in 1973, another 4 hectares in 1974, 2 hectares in 1975 and 6 hectares in 1976. Later he noticed that there was definite improvement in plant performance. Clumps became healthier, number of shoots increased and the number of flowers and capsules per panicle increased.

An enthusiastic Mr. Paul told this writer that sprinkler irrigation was essential for producing bold variety of cardamom which has a pride of place especially in the Middle East countries. He said that an estate crop with an average bulk density of 350 gms. per litre, shall attain more than 400 gms. per litre when the plants are properly irrigated. "Irrigation not only helps to increase the yield to the extent of doubling the crop, but also improves the quality of the capsules in terms of density". Of the plantations in Kallar, Mr. Paul claims that he has been producing bolder capsules having 460 gms. per litre. This was around 350-375 gms. before the introduction of sprinkler.

When pointed out that there were complaints of Azhukal disease due to sprinkler irrigation, he said that incidence of Azhukal will be less and can be controlled to a great extent if mulch is spread around the base of the plant. There has not been any noticeable increase in pests and diseases in his estate owing to irrigation.

What are the advantages of sprinkler irrigation ? "Many" says Mr. Paul who is an ardent advocate of this system of irrigation. It will avoid leaching and run off which are common to other irrigation methods. Soil erosion can be prevented to a great extent by this method. In order to prevent it further, he has made contour drains in the estate at 16 metres intervals so that excess water is taken to the main outlet through these channels. The sprinkler is also used for application of fertilisers and plant protection chemicals in the plantations. Foliar application of urea, through the sprinkler has yielded very good results. Besides, cost of application of manures was also found to be less. Since it is a mechanical process only few labourers are required to operate the sprinkler. Once the whole system is laid, not too many

Sprinkler at work in Waterfall Estate

experts are required. "Even handicapped men can operate the sprinkler. Erection and dismantling are very easy".

Mr. Paul says that operating a sprinkler will be better acceptable to the labourers. He will never be tired of watching the vigorous rotation of the sprinkler nozzles giving out the shower in the form of spray distributed in a wide circle wetting the leaf over and the soil below like a rain. As the monsoon season expires, the same labourer who had been engaged in the cultural operations could be turned into a sprinkler operator! All that he has to do is just to observe while the machine operates. "Another advantage" says Mr. Paul, "is in the case of gap filling." This can be carried out any time without waiting for the rain.

Mr. Paul suggested that it would be ideal to cut branches of the shade trees upto 10 metres from the ground without disturbing the canopy. This will help equal distribution of the spray on all plants without hitting the branches. Otherwise it will leed to wastage of water.

Apart from all these, there is one single factor that excites Mr. Paul as well like any other planter–the present trend in prices. He is very happy about it and feels glad that the rise in prices has alerted the planters of the fact that if they care more for the plantation, they will get more in return.

Mr. Paul did not forget to add a word of thanks to Cardamom Board. Loan assistance for the installation of sprinkler was sanctioned to him without any delay. Similarly, he was one of the prompt repayer of the loan. As a token for his promptness he was allowed half a per cent rebate throughout the loan period – Our thanks to Mr. Paul.

—C. P. SALEEM

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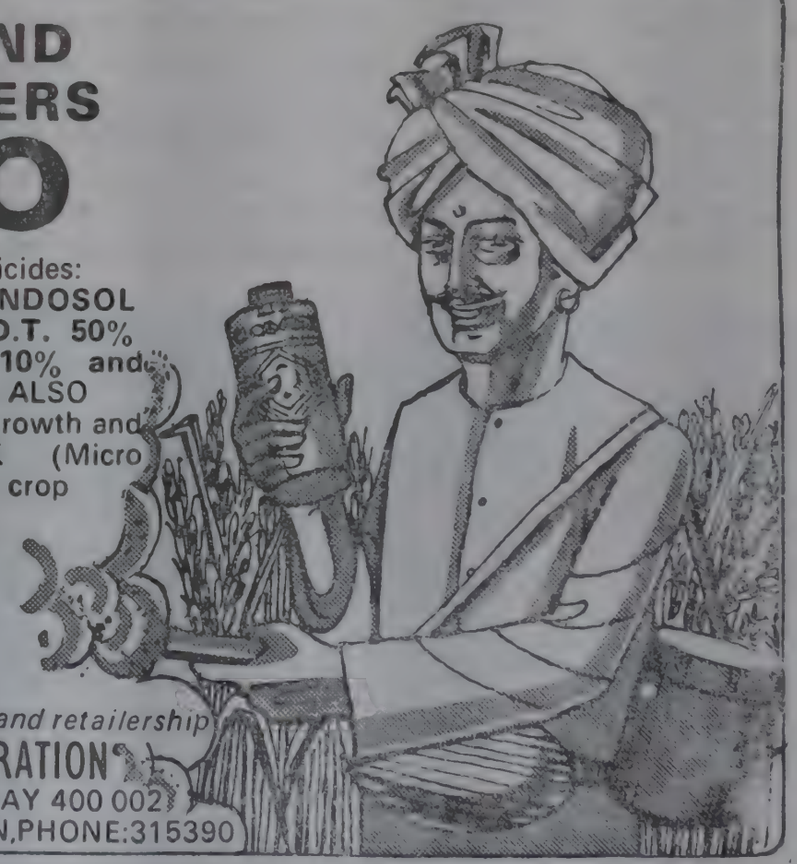

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AGRICULTURAL EQUIPMENTS ON HIRE PURCHASE

INTRODUCTION:

One single factor which influences the growth and production of cardamom to the greatest extent is rainfall and its equitable distribution throughout the year. By nature, the cardamom plant is shade loving and its root system being confined to the top few inches of surface soil, is highly susceptible to conditions of soil moisture stress. A study of the cardamom production during the past few years would indicate that there is a positive correlation between yield and the rainfall pattern. In years of delayed and scanty rains with a prolonged dry summer period, the crop production is low and conversely cardamom production has been good in years where summer showers have been good, setting in of monsoon normal and annual rainfall well distributed with minimum of dry summer period. The immediate fall in production of cardamom from 3000 M. T. during 1975-76 to 2400 M. T. during 1976-77 is attributed to the failure of the South West Monsoon rains and the scanty rains received during the North East Monsoon period. With better rainfall conditions experienced during the next year viz., 1977-78, the production increased to 3800 M. T. Irrigation helps the plants to grow and yield adequately even when there is failure of timely rainfall. Due to the very erratic rainfall pattern experienced of late in the cardamom growing tracts, the use of sprinkler irrigation system during summer months has been found to yield very good results. The impact of sprinkler irrigation will be felt only in years when normal rainfall fails; otherwise, when rainfall conditions are satisfactory, the impact may be marginal. Considering the urgent need for producing more cardamom in as short a period as possible for meeting the world market demand, use of sprinkler irrigation would be an insurance against vagaries of nature whereby higher productivity can be ensured and this underlines the importance of making available sprinkler irrigation equipments to as many planters as possible.

The sprinkler irrigation unit, worked either by a diesel engine, or electric motor and pumpset, consists of (i) sprinkler pipes, couplings and fittings, and (ii) engine/motors, pumpsets and other accessories. The initial cost of installation is high and varies with the location and elevation of the water source and topography of the land.

Having regard to the high initial outlay involved, the Board has decided that equipments may be purchased by the Board and supplied to the planters on hire purchase system.

Supply of other specialised agricultural equipments such as electrically operated cardamom curing chambers, plant protection equipments like power sprayers, dusters etc. will also be considered on merits. The scheme is detailed below:

ELIGIBILITY:

Notwithstanding anything contained in this scheme, an owner of cardamom estate of not less than two hectares is entitled to apply for the purchase of the equipment on hire purchase basis from the Board, provided the Board is convinced that it is not beyond the means of the owner to invest on such equipments. The allotment of the equipment will, however, be exclusively done by the Chairman of the Cardamom Board at his discretion.

Cardamom growers cultivating 2 to 4 hectares will be given actual cost of the equipment or Rs-20,000/- (Rupees twenty thousand only) whichever is less.

The loan amount is repayable in 8 (eight) equated annual instalments, commencing from the first anniversary of the date of delivery of the equipments. Planters holding more than 4 hectares are eligible for actual cost of the equipment or Rs. 5,000/— per hectare (Rupees five thousand only) whichever is less and the loan amount is repayable in six

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		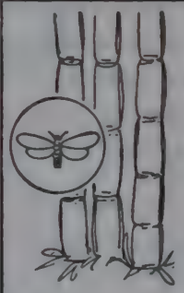	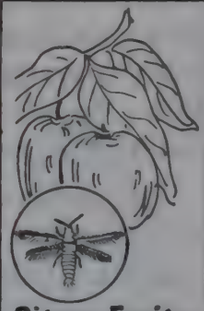		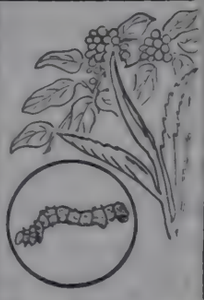
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APPLICATION :

Application for hire purchase loan in the prescribed from should be sent to the Chairman. Cardamom Board through the Liaison Officer/Extension Officer of the Board having jurisdiction over the plantation concerned, along with a proforma invoice from the suppliers, a promissory note for the required amount and with 10% of the approximate cost of the equipment proposed to be purchased, as Earnest Money Deposit. The Liaison / Extension Officer or any other officer of the Board authorised for the purpose will inspect the estate concerned to find out the reasonableness of the applicant's requirement and recommend the suitability of the equipment and feasibility of its installation. An agreement in the prescribed form will have to be executed before payment is made to the supplier.

SUPPLY OF EQUIPMENTS:

The Board will acquire the machinery according to the specifications and recommendation of the Liaison officer and/or any other officer, directed by the Board for the purpose. The Loanee should insure the equipment supplied to him under hire purchase loan. The policy should cover the mortgage clause and should be taken in the name of the Cardamom Board.

INTEREST :

. Interest will be payable at the rates fixed from time to time on the basis of the rates of interest charged on the Board by the Government of India.

CONDITIONS :

1. The cost of transportation, installation and insurance of the machinery is to be borne by the applicant and the Board will not reimburse these charges.

2. The hirer should furnish a security consisting of immovable property or a bank guarantee or an indemnity Bond from the Life Insurance Corporation of adequate value to the satisfaction of the Board.

3. The hirer shall duly and promptly pay the hire on the due dates fixed by the Board, without delay or default.

4. He shall keep the machinery in his possession in trust for the Board, free from any distress, execution or other legal processes and shall on no account alienate, assign, underlet or encumber, whether, by way of sale, mortgage, pledge, charge or otherwise or for any other cause part with its possession.

5. He shall keep the machinery in his estate at a place properly protected from all accidents and shall not without the written consent of the Board remove or allow it to be removed therefrom to any other estate or place.

6. Rent, rates and taxes in respect of the premises where the machinery is kept, should be promptly paid.

7. The hirer shall, at his own cost, keep the machinery in good condition and order and get the machinery periodically serviced, replacing worn-out parts.

8. The hirer shall put the machinery to such use as may be permitted by the owner.

9. The machinery shall be insured against the risks of accidents arising out of flood, fire, theft, strike, riot, malicious damage and causes of like nature for an amount which shall not be less than the cost of the machinery. The initial insurance shall be for the full value of the machinery and the annual renewal of insurance shall be for amounts outstanding at the point of time. The policy of insurance shall be in the name of the Board.

10. The Board reserves the right to enter the premises, where the machinery is kept, for inspection with or without notice, by any of its officers authorised by the Chairman.

11. When the Board is convinced that the machinery is not being properly used or any of the conditions stipulated above are not being adhered to, or the hirer contravenes the conditions of hire purchase, the Board reserves the right to take possession of the equipment without assigning any reasons. In such cases, the hirer will have to forfeit the 10% deposit. After taking into consideration the depreciation charges as determined by an officer of the Board, the balance, if any, will have to be paid to the Board by the hirer. In case, any amount is due to the hirer, that will be disbursed in accordance with the procedure prescribed by the Board from time to time.

12. The Board reserves the right to revoke, cancel, abrogate or amend any of the conditions stipulated above. □

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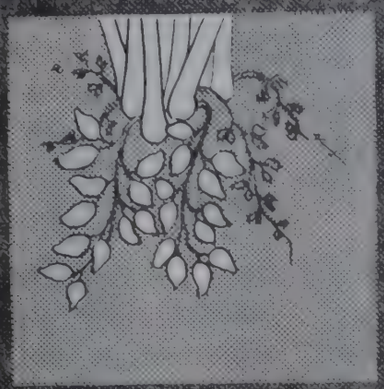

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IRAN

INTRODUCTION :

Iran, with a population of 31.3 million, while an important market for cardamom, is not comparable in terms of per capita consumption with the other oil-producing states of West Asia. Iran is primarily a market for bleached cardamom; such usage as exists for green cardamom is mainly among non-Iranian Arabs living in the South-West of the country.

IMPORT HISTORY

Full details of the imports of cardamom to Iran by source are set out in Table - 2. This data shows clearly the high incidence of purchase from third markets, as well as the marked decline in the direct Indian share of the market in Iran. Since 1971/1972 the Indian market share has declined from over 72 per cent to under 15 per cent.

Moreover, the reported import figures are, according to trade sources, an under-estimate of total consumption. A more accurate estimate of total consumption in Iran is 80-85 tonnes per annum. The balance of imports are unrecorded imports from non - producing countries such as Kuwait, Dubai and other Gulf States.

Direct exports from India to Iran are set out in Table - 3 and gives further evidence of the decline in the level of direct supply to the Iranian market. From a peak of 68 tonnes in 1971-72, quantities shipped have fallento only eight tonnes in 1976-77.

However, Iran is not a market where new supplying countries have made significant share gains. The principal supply source today is Dubai, a non-producing country and itself a significant importer of cardamom from India, though the scale of reported imports from Dubai in 1976-77 suggests that the official figures from this source may not be completely accurate.

What can be concluded from these statistics is that the Indian Cardamom exporters are not deriving their maximum direct share of the market.

USAGE :

Iran is primarily a market for bleached cardamom. The small imports of unbleached cardamom satisfy the demand from Arabs resident in the South-West area of Iran, bordering Iraq and Kuwait and centred on Abadan.

The typical usage of cardamom in Iran is for the manufacture of confectionery and of pastries. Particularly the use of cardamom in the manufacture of gaz, a white sweetmeat comprising milk, sugar and cardamom, dictates the usage of bleached cardamom. But even for pastries bleached is preferred both by industrial users and consumers.

Cardamom is essentially an industrial raw material in Iran. The bulk of the quantities imported are distributed to manufacturers of confectionery or bakery products who use it for its distinctive flavour and aroma. There is also some evidence that the use

Table - 1
SHARE OF IMPORTS-VOLUME BASIS

	1971-71 %	1972-73 %	1973-74 %	1974-75 %	1975-76 %	1976-77 %
India	72.2	75.6	92.5	49.6	37.8	15.0
Tanzania	—	—	—	2.6	23.0	—
Guatemala	—	—	3.7	—	2.7	9.3
Sri Lanka	5.2	7.9	—	9.3	1.3	2.1
Dubai	21.5	6.5	3.7	17.0	29.7	46.8
Other non-producing countries	1.1	10.0	0.1	21.5	5.5	26.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Compiled from National Foreign Trade Statistics-Iran

fo bleached rather than any other type of cardamom is partly because bleached is perceived to have a less pronounced taste; in the context of confectionery a milder taste is considered to be more appropriate.

There is some direct consumer usage, estimated by the trade to represent about 20-30 per cent of the volume of imports and the end-use of this volume is also mainly for baking or for the making of home - produced confectionery.

Small quantities of cardamom-flavoured tea are consumed, and cardamom coffee is also known in the market but the usual occasion for serving cardamom coffee is at funerals so this usage accounts for only a tiny proportion of total consumption of cardamom.

Cardamom is also used in very small quantities in the manufacture of meat products in Iran but again the volume used is very small. The major meat processor in Tehran, for example, imports only 15 kgs. per annum. This quantity is imported from the Federal Republic of Germany to ensure that the ground cardamom is of the quality and sterility necessary for his production processes.

Cardamom consumption is static according to market sources and no significant changes in consumption patterns are forecast by the trade.

CONSUMER PATTERNS :

The population of Iran is 31.3 million, with slightly more males than females and over half under

Table - 2

IMPORT OF CARDAMOM INTO IRAN - BY SOURCE

Year	Source	Quantity (M. T.)	Value (Rs.'000s)	Value ($ '000s)
1971-72	India	59.8	2,127	279.5
	Sri Lanka	4.3	184	24.2
	Dubai	17.8	779	102.3
	Others	0.9	31	4.1
	TOTAL:	82.8	3,121	410.1
1972-73	Dubai	3.7	103	12.8
	Sri Lanka	4.5	208	25.8
	Qatar	Neg.	3	0.4
	India	43.1	1,039	128.8
	Bahrain	0.7	26	3.1
	U.S.A.	3.0	110	13.6
	Guatemala	2.0	78	9.7
	TOTAL	57.0	1,567	194.2
1973-74	India	25.0	468	57.8
	Guatemala	1.0	23	2.8
	Bahrain	Neg.	4	0.5
	Dubai	1.0	16	2.0
	TOTAL	27.0	511	63.1
1974-75	Israel	4.0	298	35.0
	Dubai	13.2	620	72.9
	Japan	0.7	37	4.4
	Sri Lanka	7.2	519	61.0
	Oman	0.6	37	4.3
	Kuwait	0.9	50	5.9
	India	38.6	1,216	142.9
	Singapore	1.0	40	4.7
	Bahrain	0.4	31	3.6
	Tanzania	2.0	71	8.3
	Kenya	5.0	235	27.6
	U. S. A.	3.2	203	23.9
	Trinidad	1.0	86	10.2
	TOTAL	77.8	3,443	404.7
1975-76	India	28.0	2,060	231.2
	Guatemala	2.0	95	10.7
	SriLanka	1.0	43	4.8
	Tanzania	17.0	713	80.0
	Dubai	22.0	914	102.6
	Philippines	Neg.	3	0.3
	Kuwait	1.0	94	10.6
	Finland	1.0	83	9.3
	Netherlands	2.0	157	17.6
	TOTAL	74.0	4,162	467.1

1976-77	Dubai	24.7	791	89.1
	Sri Lanka	1.1	129	14.5
	Oman	0.3	17	1.9
	Kuwait	2.2	150	16.9
	India	7.9	848	95.5
	Signapore	9.7	114	12.8
	Bahrain	1.9	57	6.4
	Guatemala	4.9	150	16.9
	TOTAL	52.8	2,256	254.0

Source: National Foreign Trade Statistics-Iran

Table - 2

EXPORT OF CARDAMOM FROM INDIA TO IRAN DURING 1971-72 TO 1975-76

Year	Grades	Quantity (M. T.)	Value (Rs.'oos)	(S 'oos)
1971-72	Alleppey Green	17	576	67.7
	Coorg Green	1	66	7.8
	Bleached/Bleachable	47	1,282	150.8
	Seeds	2	55	6.5
	Others Mixed	1	21	2.5
	TOTAL	68	2,000	235 3
1972-73	Alleppey Green	Neg.	5	0.6
	Coorg Green	...	...	...
	Bleached/Bleachable	12	249	29.3
	Seeds	...	...	...
	Others Mixed	2	35	4.1
	TOTAL :	14	289	34.0
1973-74	Alleppey Green	...	...	...
	Coorg Green	...	...	...
	Bleached/Bleachable	5	224	26.4
	Seeds	...	...	...
	Others Mixed	...	...	...
	TOTAL :	5	224	26.4
1974-75	Alleppey Green	3	194	22.8
	Coorg Green	Neg.	43	5.1
	Bleached/Bleachable	7	581	68.4
	Seeds	...	...	...
	Others Mixed	...	...	...
	TOTAL :	10	818	96.3
1975-76	Alleppey Green	2	143	16.8
	Coorg Green	...	...	...
	Bleadhed/Bleachable	11	778	91.5
	Seeds	...	...	...
	Others Mixed	...	...	...
	TOTAL :	13	921	108 3

Source : Cardamom Board India.

20 years of age. By income, it is estimated that 10 per cent of the population fall in the upper bracket, with a household income of over Rls 1 million per annum, a further 30 per cent have a household income in excess of Rls 350,000, while those with a household income of Rls 200,000 per annum account for the balance of population (60 per cent). Average household size is 4.9 persons. The Iranian population, while predominantly Muslim, are of the Shiah sect and differ markedly in culture, background and attitudes from other population groups in West Asia. The language spoken is Farsi which, while written in Arabic script has no similarity with Arabic in syntax, pronunciation or in origins.

These differences in culture and attitudes are an important aspect of marketing to the Iranian consumer. It should be noted that Iran is a market where the decision-maker on food purchases is usually female. It is also a much more dynamic market in terms of changing tastes and consumer shopping habits.

DISTRIBUTION :

Cardamom in Iran is distributed through a network of wholesalers, second level wholesalers and wholesaler/retailers to retailers and to industrial end-users. Importers and trade sources cannot estimate the numbers of outlets involved either in the industrial distribution chain or involved in distribution to the domestic consumer.

For the industrial user, who is normally a small bakery or manufacturer, the usual channel of distribution is from the importer, who may himself act as a

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Swadeshi Mill Compound, Bombay-400 004

2726, Lokhand Bazar, Ahmedabad-380 001

Rachana JAL-23

wholesaler, to wholesaler, to bakery or confectioner. Average units of purchase are between 5 kgs. and 15 kgs. Trade margins in this channel of distribution are :

Importer - Specialist wholesaler : 5-15 per cent

Specialist wholesaler-Baker/Confectioner : 5-15 per cent

For the domestic consumer, domestic usage accounting for only 20-30 per cent of usage, the distribution pattern is from importer to wholesaler, wholesaler to specialised retailers who carry mainly spices. These "maghazi" shops are the traditional sales point for spices and cardamom is held in bulk with a display quantity only kept in a wide-necked glass or plastic jar of about 2½ litres volume. Purchases are weighed out to order and the usual unit of purchase is in the region of 100-250 grams. Prices quoted at the time of the field survey were approximately I Rials 150 (Rs. 20/-) per 100 grams.

Trade margins in the retail segment are controlled by law to under 15 per cent In fact margins vary in the following ranges :

Importer - Wholesaler 10-15 per cent

Wholesaler - Retailer 5-15 per cent

Retailer - Consumer 10 per cent approx

An important feature of both the industrial and consumer distribution chains is the very long credit lines extended by importers and wholesalers. Credit of 4-6 months is common, rolled over on subsequent purchases. This tends to ensure a high degree of loyalty among wholesalers and retailers to their established supply sources.

A fast emergent feature of Iranian food distribution is the supermarket. Already in the major cities as much as 20 per cent of food sales are handled by supermarkets. Many of these outlets are beginning to import on their own account or import through distribution companies specifically orientated to supplying supermarkets. At present, supermarkets do not stock cardamom at all, or stock it only as part of an integrated imported spices range such as Spice Island or Mc Cormick, when it may be available in ground form. A market opportunity may exist in the short term to provide these outlets with prepacked whole bleached cardamom, but the volume involved may be small - it is estimated only about five tonnes maximum - and considerable investment in packaging development will be necessary to ensure that cardamom will move of the supermarket shelf at an economic rate to justify separate shelf space. In the longer term a periodic review of the changing distribution pattern in Iran is required to ensure that when trade shifts towards the supermarket outlets, cardamom supplise are routed into this chain.

IMPORT PRACTICES :

Cardamom is imported into Iran by traditional merchant/importers either direct from the producing countries or through indenting agents. In addition, there is an element of unofficial imports from secondary supply centres such as Dubai or Bahrain, which do not appear in the official statistics.

Quotations are normally sought against samples, prices quoted normally being Indian Rupees or U. S. $ from other sources of supply. Units of purchase vary from importer to importer but annual quantities in excess of 15 tonnes are unusual and individual orders of 2-4 tonnes are the rule for major importers. Shipment is normally by sea, but in some instances shipment by air freight is required; at present this is usually at an additional cost of Rs. 7/- per kilo.

The main port of supply is Khorramshahe, where current (November 1977) prices are Rs. 110/- C & F per kilo.

The importing trade see little variation in market trend - it is seen as broadly stable.

TARIFFS AND REGULATIONS :

At present, there is a duty of 20 per cent ad valorem on the C & F price on the entry of cardamom to Iran. In addition, a Commercial Benefit Tax of Rls 20 per kg. is levied. No other tariff or non-tariff barriers exist.

PROMOTION :

At present, there is no promotion of either consumption of cardamom or of sales in the Iran market. In the past, one spice importer, Sadaf, carried out some generic promotion of spices but no longer undertakes any above-the-line promotion.

DEMAND ASSESSMENT :

The demand for cardamom in Iran has remained broadly constant for the past five years. No correlations between consumption and income, or even prices,

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A UNIQUE CARDAMOM AUCTIONEERING HOUSE IN INDIA FOR ALL GRADES OF EXPORT QUALITY CARDAMOM

appear to exist. Moreover, the official import statistics do not reflect the consistent demand reported by the importing trade and other sources. The largest part of the wide fluctuations in imports is accountable to unrecorded imports; cardamom is a small volume, high value commodity subject to a high rate of duty.

Mean imports over the past six years, according to official statistics, are 61.4 tonnes per annum, while consumption is estimated to be in the region of 80-83 tonnes per annum at present. No major changes in consumption levels are expected, since the end-uses in the market are firmly established and no significanf changes in consumption habits for either "gaz" confectionery or for the pastries using cardamom, is anticipated. Only by developing new industrial end-uses for cardamom in the Iranian market, will there be any maior variation in consumption in this segment of the market which accounts for 70-80 per cent of consumption.

In the consumer segment of the market, the main factor that will affect demand will be changes in consumer shopping patterns. While at present the spice shops situated in the Souk areas of the major towns are an effective distribution channel for cardamom, already there is a shift of food purchasing to suburban supermarkets where cardamom is not readily available and which outlets are not normally supplied by the traditional importer / wholesaler channels. Unless supply channels to these outlets can be established, a consumption loss can be anticipated.

PROPOSED STRATEGIES :

The main strategy to develop cardamom consumption in Iran must be to extend its usage into new product areas. At present, end-uses, either in the industrial or domestic market segments, are limited to confectionery and pastries.

There is scope for developing consumption in prepared foods such as pilao rice dishes which form a staple part of Iranian cuisine. There may also be other types of end-uses which could be developed in Iran, and the main strategic requirement is an educational programme at both consumer and industrial levels to demonstrate the wide range of potential uses for cardamom.

To carry out this type of educational programme, a wide range of marketing tools is available. There are two Farsi television channels giving 70 per cent national coverage. Radio reaches 95 per cent of Iran and both television and radio channels accept advertising.

In the press area, newspapers and magazines exist, though their coverage tends to be concentrated in the Tehran area: 40 per cent of newspaper readership and 60 per cent of magazine readership. Other media available include cinema and point of sale.

For promotion of cardamom two types of activity are considered relevant. To reach the industrial market segment with new ideas for cardamom end-use, cardamom exporters and the Cardamom Board should participate in the trade fairs which are regularly held forthe food manufacturing and distribution trades. To reach the consumer, a programme of public relations to reach influential women's page writers on national pepers and women's maggzines, is required. The programme should also reach appropriate producers and presenters in radio and television.

A full - scale advertising programme in support of cardamom is unlikely to be economically viable in Iran.

ANNEX

PRINCIPAL IMPORTERS OF CARDAMOM - IRAN

Iran Baboo Trading Co. Ltd.,
Post Box No. 1664,
Serai,
Jawaheri,
TEHRAN,
IRAN.

Haji Yussaf Javakoli Attar,
Bazar, Chahar Sau Bozerg,
Opp. Seraye Safa,
TEHRAN,
IRAN.

Gazer Co.,
Ave. Bozerjomehri,
Saraye Nassiri,
No. 16, TEHRAN,
IRAN.

Javaher Co.,
Saraye Saffari,
Ave. Bozerjomehri,
TEHRAN,
I R A N.

Hari Hind Co,,
Bazar, Saraye Mohamediyeh,
Opp. Noorcus Khar,
TEHRAN,
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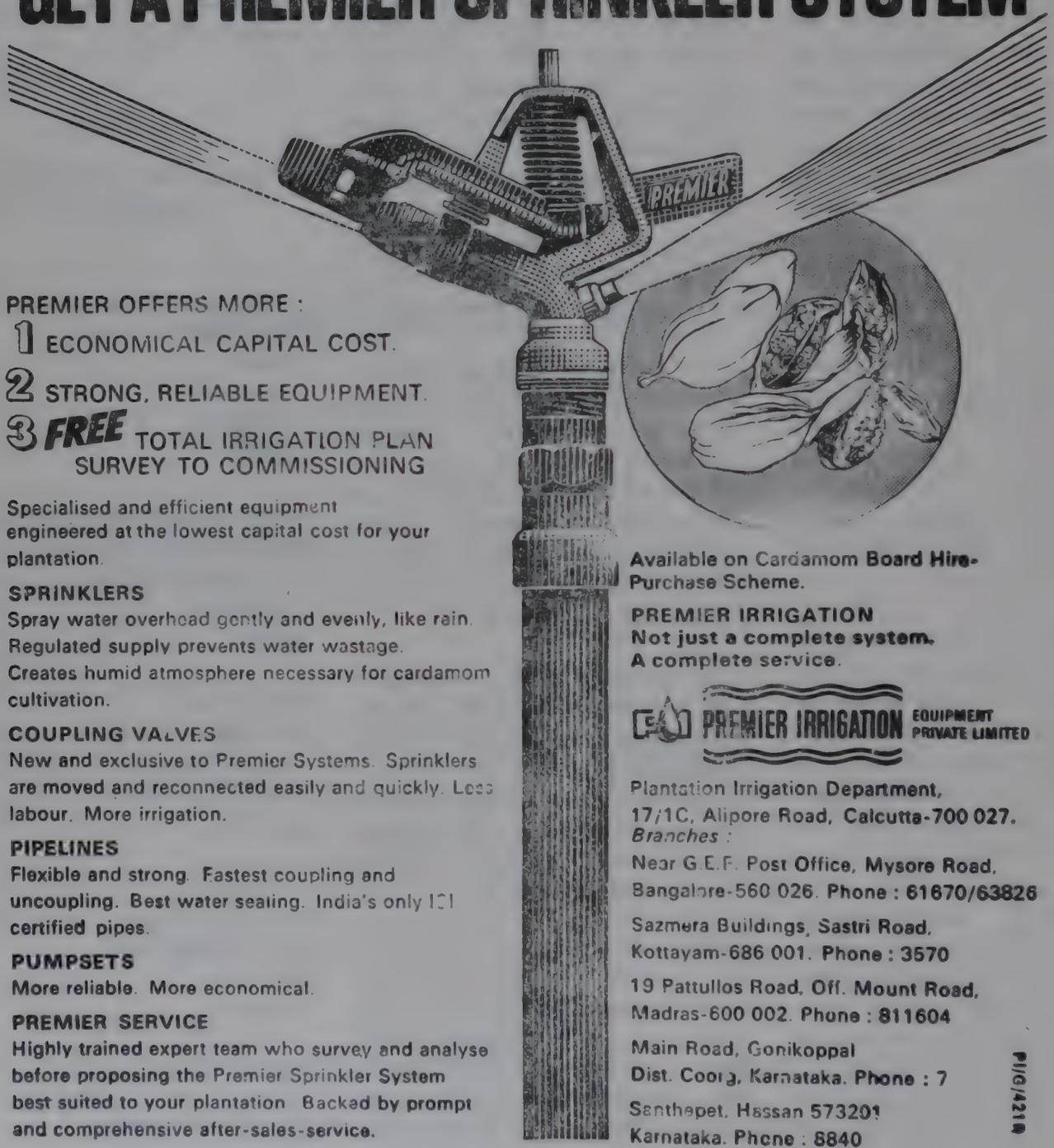

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SPRINKLERS
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New and exclusive to Premier Systems. Sprinklers are moved and reconnected easily and quickly. Less labour. More irrigation.

PIPELINES
Flexible and strong. Fastest coupling and uncoupling. Best water sealing. India's only ISI certified pipes.

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More reliable. More economical.

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Sazmera Buildings, Sastri Road, Kottayam-686 001. Phone : 3570

19 Pattullos Road, Off. Mount Road, Madras-600 002. Phone : 811604

Main Road, Gonikoppal
Dist. Coorg, Karnataka. Phone : 7

Santhepet, Hassan 573201
Karnataka. Phone : 8840

PI/G/421B

CARDAMOM PLANTERS MEET CENTRAL MINISTER

Mr. President, the Hon'ble Minister, Cardamom Board Chairman and friends,

It is my proud privilege to welcome all of you to this conference on behalf of the Bodinayakanur Piranthiya Thenninthiya Ela Vivasayigal Sangam, and on behalf of myself. Firstly I welcome into our midst the chief guest of the day, Shri K. K. Goyal, the Hon'ble Minister of State for Commerce, Civil Supplies and Co-operation, for having accepted our invitation and flying over here to participate in this conference.

I also welcome our friend, philosopher and guide, Shri S. G Sundaram, Chairman, Cardamom Board. He is not a stranger to you and he needs no introduction.

I welcome the Cardamom planters who have gathered here to exchange ideas, air their grievances and arrive at amicable solutions. I request them to feel free and speak their mind.

I welcome the Traders, the other half of our Industry. We, as growers, are only one half. They are our complements. It is a question of mutual survival and I welcome them and offer them our full hearted support. Let them be prosperous! and in their prosperity we will find our prosperous future!

I welcome our Vice-President Mr. K P. Thilakar, presiding over the conference and all our directors and members of the Sangam.

I also welcome the guests, special invitees and Newspaper correspondents for gracing the function with their august presence. Last but not least, I welcome the new members of the Cardamom Board. I wish them a pleasant tenure of office. Let the new blood infused into the Board add a new dimension to the cardamom industry. Hon'ble Minister Sir,

With your permission, I wish to refer to the industry as a whole, the brief history of our Sangam and the problems faced by the planters to-day.

The Bodinayakanur Piranthiya Thenninthiya Ela Vivasayigal Sangam, Bodinayakanur, is a registered body, founded in the early twenties of this century by our forefathers. The Sangam, established with the main aim of protecting the welfare of the planters has grown from strength to strength in the few decades and today has emerged as a link between the planters and the various governmental agencies. It has diversified its activities in the course of its eventful history. It celebrated its Silver Jubilee in the year 1971. It has opened three pesticides and fertilizers depots, one at Bodinayakanur, Tamilnadu, and the others at Santhanpara and Gajanapara, Kerala. It is having two auction centres to help the planter realise better prices. It is also running an Arts College named Cardamom Planters' Association College at Bodinayakanur, for the benefit of educationally backward communities and the wards of the labour working in the plantations. Now the Sangam has a membership of over one thousand comprising mainly of small planters owning less than 5 acres of cardamom. plantations in the revenue villages of Rajakad Chinnakkanal and Santhanpara in Udumbanchola Taluk, Idukki District, Kerala. Most of the cardamom estates in these villages are owned by the Tamilians, They live in Uthamapalayam Taluk, Madurai District, Tamilnadu. The total acreage of the cardamom plantations in the High Ranges is about 1,05,000 acres.

Cardamom, known as the Queen of Spices, is a very good foreign exchange earner. We have a good foreign market and we have vast potentialities of expanding our market. But unfortunately a number of obstacles block the rate of growth of the industry. I will briefly mention a few of them.

AZHUKAL:

For the past one decade, a dangerous disease known variously as root-rot, clump rot, or 'Azhukal' is infecting the cardamom plants in epidemic propor-

Extract of the welcome speech delivered by Shri K. Subbiah, Director, Bodinayakanur Piranthiya Thenninthiya Ela Vivasayigal Sangam at a conference of various cardamom interests in Bodinayakanur arranged in connection with the visit of Shri K K. Goyal, Hon'ble State Minister for Commerce, Civil Supplies and Co-operation, Government of India, on 11th December 1978.

Associated Cardamom Auctioners (Private) Limited

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tions. The plants affected simply wither away. Vast tracts of land have been made yieldless and vacant because of the onset of this virulent disease. All our efforts to control, if not eradicate this dangerous disease had been of no use. The Agricultural Universities and almost all the leading companies manufacturing pesticides and fungicides have been approached. The cure suggested by them seems to control the disease only to a slight extent. I request the Hon'ble Minister of Commerce, to order an in-depth study of the problem in consultation with the Cardamom Board and suggest an immediate and effective method to eradicate the disease.

TAXES:

The cardamom planter like the proverbial camel is groaning under too many and too heavy taxation both Central and State. I will cite just one or two as an example and seek redressal from the Hon'ble Minister.

EXPORT DUTY:

The Central Government thought it fit to levy an export duty of Rs. 50/- per kilo last year. The industry almost came to a standstill. On representation the levy was reduced to Rs. 10/-. This levy stands in the way of the enterprising exporters. The duty was levied with the idea of earning more revenue. But the result was reduction of export. We request the Government not to kill the goose laying golden eggs. We appeal to the Minister to consider our request and recommend repealing of the Export Duty.

SALESTAX:

The Cardamom Board and the Rubber Board are more or less similar organisations. In Rubber Industry, the salestax is levied at the purchasing point only. But in the cardamom industry the grower has to pay the tax. In neighbouring Tamilnadu and Karnataka, planters are not required to pay salestax for cardamom. So this anomalous practice of levying tax to the planters may please be cancelled. As in the neighbouring States, salestax may be levied at the first purchasing point. Planters are treated as dealers only in Kerala. This practice is not in vogue in the neighbouring states. Hence this procedure may be dropped. By levying the salestax at the first purchasing point, it may be pointed out, that exchequer will not lose any revenue. We request the Minister to use his good offices and redress one of the long standing grievances of the planters.

LABOUR UNREST:

Plantations in Kerala are associated with labour unrest. The trade unions there interfere with the peacefull atmosphere prevailing in the estates and are the root cause of all disturbance. Every year during the peak picking season, they indulge in unlawful atrocities in the name of strike. The planter undergoes untold sufferings to rear up the plant and when he is about to gather the yield, these trade unions become stumbling blocks. He is not permitted to gather his annual yield. In his very presence his estate and its yield is wasted. This helps neither the planter nor the workers. The yield, not gathered, falls on the ground and in our considered opinion, it is nothing but criminal waste and vandalism. It is estimated that a minimum loss to the tune of 4 crores was sustained by the cardamom planters in the Idukki District alone last month, as a result of the general strike. When the production suffers, the export target cannot be achieved and the anticipated revenue will not be forth coming. Such strikes have far reaching consequences. The harassment meted out to a planter is so inhuman, that he is compelled to abandon his estate and all the assets thereto. This does not auger well for the industry.

We request the Minister to intervene immediately and take effective steps to put an end to this brinkmanship game played by the trade unions. It is a question of the very survival of the industry and the continued earning of the foreign exchange, very much needed for our developmental plans. The trade unions must be told, in very unequivocal terms, that their prosperity lies in the prosperity of the planter and there is ample scope for peaceful co-existenc . We hope that the Hon'ble Minister will appreciate the urgency and seriousness of the situation and do the needful.

We request the Minister to bring the cardamom industry under the purview of the Industrial Relations Bill. If it is done, there will neither be strikes nor unlawful demands by the Trade Unions. Cardamom will be classified as a perishable fruit. Thus the Industrial Relations Bill covering the cardamom industry also will be a boon to the planter.

Lastly, a few words about our esteemed Chairman of the

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Cardamom Board. Since his taking over as Chairman, a ray of hope dawned in the life of the planter. With his robust optimism and sensible dynamism he convinced all concerned that the grower and the trader need not distrust the other. He made it very plain that there need be no rivalry between the two. He assured the grower a better price, and, at the same time assured the traders a steady expanding market. When the Cardamom plantations faced one of the worst drought periods some three years back, his very presence was reassuring. He supplied seedlings for replanting the areas affected at 50% of the cost. To check the spreading of root-rot disease, the sprinkling of Bordeaux Mixture was suggested. He made arrangements for giving subsidies to the planters for Bordeaux Mixture. He identifies himself with the planters and takes active interest in the taxation policy of the Government.

Our dream of having a Research Station in our area became a reality with the establishment of the ResearchStation at Myladumpara, Kerala. We thank the Chairman for this solid achievement. But at present this station is in its infancy. Buildings are to be erected and equipments purchased. It will take one or two years for the station to function as a full-fledged institution. The continued presence of the magnetic personality of the Chairman is very essential for the development of the Research station. Further after being almost paralysed by one of the worst depressions, the industry is just looking up, thanks to the efforts of the Chairman. At this juncture, he has been transferred to the Rubber Board. He is asked to hold additional charge of the Cardamom Board In the circumstances cited above, we request the Hon'ble Minister to consider our plight sympathetically and send our Chairman back to us. We need him as our Chief. Though a dynamic personality like our Chairman will be wanted everywhere we need him most for at least a few more years, to put the industry on a firm footing. We pray to the Minister to help us. ❑

Harnessing Water Resources

It is often remarked that in India there are either droughts or floods. The rainy season in India lasts for about four months in a year, mostly between June and September. Often, the rains are erratic in quantity, incidence and duration. In years of scanty rainfall severe droughts occur. In some years, because of heavy and incessant rainfall in catchment areas, floods occur causing great havoc and misery. The unprecedented floods in India this year have brought into sharp focus the need for accelerating the pace of progress in harnessing the great river systems of India.

Impressive progress has, in fact, been made during the last three decades in harnessing the water resources of the country. In 1951 the area under irrigation was 9.7 million hectares for major and medium projects and 12.95 million hectares for ground-water and minor surface water schemes. Now, 24.9million hectares are irrigated by major and medium schemes and 27.3 million hectares through groundwater and minor irrigation sources

In the five years 1978-83, additional irrigation potential of 17 million hectares has been planned-eight million hectares through major/medium projects and another nine million hectares through minor projects. The outlay contemplated is Rs.72,500 million for major and medium schemes, and about Rs. 49,000 million for minor schemes.

Important steps have been taken towards resolving differences with neighbouring countries to harness the waters of international rivers.

Study has already been undertaken by Indian and international experts on the Garland Canal Project which involves the conservation and harnessing of the immense water resources of the Himalayan ranges and the Central and Southern plateaux and the construction of a transfer system on the High Ranges of the Western Ghates by which the water of the west flowing rivers will be diverted to the arid zones of the Central and Southern Indian drought-prone areas. The Rs. 15,000,000 million project is designed to increase India's irrigation potential six-fold that should solve its perennial problems of flood, drought, energy.

— Commercial Bulletin 15th October '78

SALES AND PRICES AT

Centre	SEPTEMBER 1978					SEPTEMBER 1977				
	Date of auction	Sales (kgs.)	Rate (Rs./kg.) Maxi-mum	Mini-mum	average	Date of auction	Sales (kgs.)	Rate (Rs /kg) Maxi-mum	Mini-mum	average
Vandanmettu	2-9-1978	18884	210.00	51.00	176.05	3-9-1977	29819	170.00	50.00	139.51
	6-9-1978	6623	220.10	79.70	174.74	6-9-1977	17104	169.30	30.00	146.97
	9-9-1978	12058	211.00	51.00	178.26	10-9-1977	32768	167.20	25.00	139.34
	12-9-1978	5173	214.70	50.20	182.03	13-9-1977	25246	161.90	67.50	135.44
	16-9-1978	24989	230.00	69.10	199.01	17-9-1977	41980	165.00	30.30	127.10
	19-9-1978	10337	225.00	60.00	194.91	20-9-1977	34666	153.10	60.00	122.90
	23-9-1978	36519	230.00	50.20	198.29	24-9-1677	47209	165.20	21.60	124.08
	26-9-1978	12483	220.20	120.10	201.10	27-9-1977	42079	155.20	50 00	128.90
	30-9-1978	41600	225.00	30.10	193.84	—	—	—	—	—
Udumbanchola	1-9-1978	917	178.90	50.00	164.15	2-9-1977	2162	155.10	120.10	133.62
	1-9 1978	676	177.60	60.00	164.67	9-9-1977	2631	151.10	63.50	133.60
	8-9-1978	2065	189.50	65.10	176.38	9-9-1977	1402	157 10	54.10	137.16
	8-9-1978	528	180.10	152.00	175.91	16-9-1977	1800	144.10	76.00	122.45
	15-9-1978	3929	207.20	91.90	191.60	16-9-1977	2650	248.20	60.10	122.38
	15-9-1978	837	200.10	50.50	181.19	23-9-1977	1838	132.90	87.10	109.88
	22-9-1978	4097	213.00	54.30	190.94	23 9-1977	3332	137.00	74.50	114.46
	22-9-1978	831	220.00	133.90	194.27	30-9-1977	2249	148.30	71.20	117.85
	29-9-1978	4876	201.20	94.20	182.94	30-9-1977	4430	138.90	60.00	122.40
	29-9-1978	1523	195.10	50 00	178.23	—	—	—	—	—
Santhanpara	4-9-1978	5704	192.00	23.20	170.31	1-9-1977	3552	149.80	76.90	129.18
	7-9-1978	6990	195.00	141.20	174.47	5-9-1977	2450	150.50	70 90	131.06
	11-9-1978	6630	204.50	37.00	275.16	8-9-1977	4035	153.50	78.00	134.07
	14-9-1978	10152	210.00	50.00	188.27	12-9-1977	3406	145.10	75.10	129.46
	18-9-1978	9527	230.10	35.00	192.46	15-9-1977	3628	144.10	78.10	121.75
	21-9-1978	15513	228.50	30.00	190.53	19-9-1977	4033	123.70	70.60	109.85
	25-9-1978	7962	219.30	19.00	181.11	22-9-1977	4290	126.20	28.20	111.08
	28-9-1978	14370	208.60	66.00	188.51	26-9-1977	3880	130.50	37.00	110.56
	—	—	—	—		29-9-1977	7001	127.00	58.00	107.12
Kallar	6-9-1978	5399	193.10	56.00	171.05	7-9-1977	4699	157.20	76.00	125.95
	13-9-1978	8512	205.10	43.40	175.07	14-9-1977	7187	139.50	70.10	114 31
	20-9-1978	8148	219.70	37.00	184.65	21-9-1977	6351	136.00	64.90	96.37
	27-9-1978	8519	205.10	40.00	175.34	28-9-1977	6639	133.90	40.10	104.89
Cochin	25-9-1978	1055	207.10	160.10	190.42	12-9-1977	1645	157.05	50.00	126.92
	—	—	—	—	—	26-9-1977	1564	158.00	63.05	98.92
Parathodu	14-9-1978	3525	211.00	69.20	186.94	—	—	—	—	—
	24-9-1978	5097	213.00	56.00	188.55	—	—	—	—	—

CARDAMOM AUCTIONS

Centre	SEPTEMBER 1978					SEPTEMBER 1977				
	Date of auction	Sales (kgs.)	Rate (Rs./kg.) Maximum	Minimum	average	Dat eof auction	Sales (kgs.)	Rate (Rs./kg.) Maximum	Minimum	average
Pattiveeranpatty	3-9-1978	1987	205.00	110.00	150.49	4-9-1977	2223	165.00	46.00	110.61
	10-9-1978	2660	195.00	75.10	163.60	11-9-1977	1789	133.50	27.10	99.62
	17-9-1978	1640	202.10	101.90	155.63	18-9-1977	3984	160.90	65.00	102.20
	24-9-1978	4349	220.00	130.00	166.78	25-9-1977	4370	164.10	38.00	99.55
		—	—	—	—	30-9 1977	2654	180.00	35.00	92 13
Mangalore	4-9-1978	22	140.00	140 00	140.00	8-9 1977	206	120.00	30.00	92.71
	11-9-1978	522	163.50	90.00	146.00	12 9-1977	777	120.10	25.00	97.50
	25-9-1978	480	167.00	58 00	150.00	—	—	—	—	—
	—	—	—	—	—	26-9-1977	158	95 00	10.00	75.95
	—	—	—	—	—	26-9 1977	58	92.00	65.00	78.38
Mercara	1-9-1978	1188	157 00	127.00	142.00	14-9-1977	5825	127.00	66.00	95.35
	8-9-1978	763	151.50	135.00	140.00	—	—	—	—	—
	15-9-1978	1851	172.00	127.00	154.00	—	—	—	—	—
	22-9-1978	1909	180.00	135 50	152.00	—	—	—	—	—
	29-9-1978	1489	158 00	135.00	143.00	—	—	—	—	—
Saklespur	2-9-1978	138	155.00	139.10	147.71	1-9-1977	1348	141.50	61.00	109 06
	5-9-1978	1311	190.40	131.90	152.75	6-9-1977	173	141.50	70.00	107.20
	5-9-1978	416	155.90	138.00	145.40	7-9-1977	2267	160.00	48.00	101.55
	7-9-1978	1073	160.00	130.00	148.30	7-9-1977	373	137.10	75 00	109.47
	9-9-1978	453	155.00	43.20	144.18	7-9-1977	1136	124.00	73.00	90.47
	12-9-1978	2009	210.10	86.50	158.48	8-9-1977	1597	146.10	65.00	89.33
	12-9-1978	345	157.90	131.10	148.20	13-9-1977	5838	175.00	50 00	102.95
	14-9-1978	2259	163.00	59.30	146.33	13-9-1977	291	105.00	90.00	101.20
	16-9-1978	836	170.00	130.00	148.62	14-9-1977	382	110.00	35.00	93.25
	19-9-1978	1282	170.00	106.10	149.30	14-9-1977	866	128.50	69.00	102.51
	19-9-1978	3369	193.00	94.00	154.60	15-9-1977	2321	165.10	65.00	97.20
	20-9-1978	700	168.10	136.80	149.07	20-9-19 7	6056	159.00	56.00	99.90
	21-9-1978	4431	168.00	50.00	151.10	20-9-1977	623	115.10	69.00	104.20
	23-9-1978	875	170.00	130.00	147.55	21-9-1977	318	119.00	42.00	99.58
	26-9-1978	5943	246.10	111.00	158.38	21-9-1977	1551	164.10	70.00	103.66
	27-9-1978	721	166.90	130.50	137.83	22-9-1977	4582	150.00	20.00	103.35
	27-9-1978	1622	155 00	38.75	139.25	24-9-1977	1115	142.00	65.00	106.69
	28-9-1978	4427	175.00	105.00	141.44	27-9-1977	5635	166.00	60.20	100.72
	30-9-1978	1055	155.10	27.00	135.68	28.9-1977	477	148.50	79.00	97.65
	—	—	—	—	—	28-9-1977	1536	150.00	74.00	110.82
	—	—	—	—	—	29-9-1977	4890	151.50	66.00	95.21
Sirsi	20-9-1978	65	146.85	95.11	132.21	—	—	—		—
	27-9-1978	92	156.83	68.00	142.32	—	—	—	—	—
Mudigere	25-9-1978	1884	169.20	121.00	145.40	—	—	—	—	—

SALES AND PRICES AT

Centre	OCTOBER 1978					OCTOBER 1977				
	Date	Sales (kgs.)	Rate Rs. / kg. Max.	Min.	Av.	Date	Sales (kgs)	Rate Rs. / Kg. Max.	Min.	Av.
Vandanmettu	3-10-78	20277	216.90	96.10	189.39	1-10-77	59099	185.00	31.40	137.32
	7-10-78	51948	218.00	50.00	188.59	4-10-77	49029	161.90	63.90	136 59
	10-10-78	30045	223.90	55 10	195.00	8-10-77	57694	169.00	25.50	137.15
	14-10-78	60491	232.20	45.00	198.47	11-10 77	41967	170.00	50.00	140.98
	17-10-78	39619	232.20	85.00	199 00	15-10 77	63839	189 00	40.00	148.59
	21-10-78	68942	260.00	40.00	201.58	18-10 77	39349	169.10	67.00	143.96
	24-10-78	44176	251.90	50.10	210.90	22-10-77	70131	179.60	24.90	141.89
	28-10-78	71724	230.70	34.00	205.58	25-10-77	39554	181.90	60.10	143.95
	31-10-78	32385	237.30	80.00	198.00	29-10-77	71061	188.00	40.00	153.68
Udumbanchola	6-10-78	5424	198.50	40.30	176.58	7-10-77	1603	142.80	38.00	124.76
	6-10-78	1690	189.50	32.00	175.10	7 10-77	3174	145.20	70.10	130 43
	13-10-78	6378	200.90	45.10	179 88	14-10-77	4465	157 00	74.90	133 74
	13-10-78	1866	191.10	145 90	180.64	14-10 77	2283	159.00	58.00	128.19
	20-10-78	6525	204.00	8.10	182 76	21-10-77	2424	158.00	77.00	131.92
	20-10-78	1889	210.00	134.00	180.75	21-10-77	18 6	146.90	57.00	132.01
	27-10-78	5699	204.00	47.00	181 55	28-10-77	4167	176.20	69.90	143.11
	27-10-78	1323	203.00	44.10	187.25	28-10-77	1504	158.10	74.00	139.09
Santhanpara	2-10-78	9611	210.10	33.00	175.31	3-10-77	5707	149.90	34.60	127.95
	5-10-78	14882	205.00	25.00	176.06	6-10-77	5090	148.10	55.00	117.96
	9-10-78	11356	201 00	27.10	174 49	10-10-77	6089	144.50	26.10	121.21
	12-10-78	15533	211.00	27.00	180 83	13-10-77	7558	161.00	63 10	128.74
	16-10-78	98 0	224.10	46.00	180.25	17-10-77	4708	157.10	64.30	131.66
	19-10-78	14318	224.20	28.00	190.32	20-10-77	7078	151.00	54.90	124.07
	23-10-78	9627	230.20	42.50	183.56	26-10 77	6631	161.10	68.30	133.60
	26-10-78	22949	230.10	33.00	191.93	27-10-77	3978	155.90	61.10	133.99
	29-10-78	7489	217.10	25.10	180.73	31-10-77	10271	164.10	74.70	125.16
Kallar	4-10-78	7739	197.00	30.20	165.31	5-10-77	8347	149.90	30.00	113.88
	11-10-78	5500	193.10	22 00	168.40	12-10-77	5629	165.30	49.10	123.62
	18-10-78	9347	214.10	26.20	170.23	19-10-77	9152	159.00	23.40	120.75
	25-10-78	8581	218.80	42.20	175.15	26-10-77	6796	161.00	36.50	122.80
Cochin	9-10-78	3738	200.00	136.00	179.18	10-10-77	3419	154 00	97.00	118.18
	20-10-78	2543	215.20	86.00	191.08	24-10-77	3667	163.80	65.00	114.04
Parathodu	1-10-78	5426	208.20	10.10	196.15	—	—	—	—	—
	8-10-78	4720	195.00	36.00	175 53	—	—	—	—	—
	15-10-78	3993	209.60	32.20	169.15	—	—	—	—	—
	22-10-78	5374	217.50	136.10	186.71	—	—	—	—	—
Pattiveeranpatti	1-10-78	3075	200.10	88 90	153.32	9-10-77	4858	155.00	60.00	98.17
	8-10-78	2834	214.00	70.60	145.45	16-10-77	5406	200.00	50.00	109.75
	15-10-78	5233	202.50	131.90	160.00	23-10-77	4281	200.00	40.10	103.25
	22-10-78	5593	207.00	92.60	163.89	30-10-77	6190	177.50	65.00	109.45
	29-10-78	3060	187.10	100.00	156.76	—	—	—	—	—

CARDAMOM AUCTIONS

Centre	OCTOBER 1978					OCTOBER 1977				
	Date	Sales (kgs.)	Rate Rs. / kg. Max.	Min.	Av.	Date	Sales (kgs.)	Rate Rs. / kg. Max.	Min.	Av.
Mangalore	4-10-78	3242	165.00	130.00	142.00	6-10-77	86	80.00	10.00	67.00
	5-10-78	129	147.00	135.00	136.00	17-10-77	666	110.00	20.00	90.00
	9-10-78	133	135.00	130.00	131.29	20-10-77	37	73.00	40.00	63.53
	9-10-78	476	162.50	50.00	140.00	24-10-77	84	100.10	40.00	90.00
	18-10-78	4163	175.50	136.50	155.00	24-10-77	24	82.00	82.00	82.00
	23-10-78	664	158.00	60.00	145.00	26-10-77	7142	117.50	64.00	95.00
	23-10-78	18	135.00	50.00	125.05	31-10-77	16	81.00	81.00	81.00
Mercara	6-10-78	611	159.00	130.50	144.00	14-10-77	761	110.00	80.00	90.00
	13-10-78	2405	163.00	130.00	145.00	28-10-77	783	120.00	63.50	92.00
	20-10-78	1058	169.50	133.00	150.00	—	—	—	—	—
	27 10 78	2671	169.50	132.00	153.00	—	—	—	—	—
Saklaspur	3-10-78	4274	177.00	80.00	135.93	1-10-77	671	143.00	73.40	98.00
	4-10-78	742	159.20	112.00	126.51	4-10-77	5911	171.00	64.00	98.54
	4-10-78	1385	159.20	115.80	131.35	4-10-77	355	118.10	89.00	102.05
	5-10-78	4531	157.10	80.00	132.50	5-10-77	419	139.10	80.00	96.00
	7-10-78	1186	164.00	105.00	136.73	5-10-77	907	157.50	76.00	101.20
	7-10 78	470	155.20	80.10	137.04	6-10-77	6017	149.60	15.00	91.67
	10-10-78	9102	255.10	79.09	152.52	8-10-77	664	140.00	35.50	95.47
	11-10-78	1321	163.50	82.00	134.20	11-10-77	7364	151.00	50.00	93.51
	11-10-78	2805	181.10	108.10	140.80	11-10-77	348	110.00	85.00	97.10
	12-10-78	6725	180.10	80.00	142.30	12-10-77	418	138.00	43.10	93.46
	14-10-78	2093	169.00	120.00	142.46	13-10-77	4324	124.00	70.00	89.92
	17-10-78	12710	236.00	100.00	150.44	15-10-77	741	121.00	73.00	90.22
	18-10-78	15 5	171.00	774.10	142.22	15-10-77	1859	135 90	72.30	95.75
	18-10-78	3405	200.00	108.00	146.00	18-10-77	447	104.00	80.50	95.12
	19-10-78	9564	189.00	94.00	145.96	19-10-77	554	129.00	68.40	90.95
	21-10-78	2242	170.10	86.00	139.84	19-10-77	1574	147.00	74.00	95.72
	24-10-78	12356	261.20	100.00	146.87	20-10-77	4947	134.00	70.00	77.70
	25-10-78	2344	180 00	126.00	144.71	22-10-77	923	132.00	71.00	94.77
	25-10-78	3136	174.00	80.10	143.33	25-10-77	6021	147.00	53.00	91.90
	26-10-78	9910	170.00	96.00	143.57	25-10-77	468	108.40	70.00	91.14
	—	—	—	—	—	26-10-77	1768	145.20	70.00	93.68
	—	—	—	—	—	26-10-77	344	125.40	55.00	81.73
	—	—	—	—	—	27-10-77	4708	133.00	63.00	88.21
	—	—	—	—	—	29-10-77	1715	121.30	73.00	96.60
Sirsi	4-10-78	241	147.55	50.00	134.43	—	—	—	—	—
	11-10-78	958	141.26	41.05	130.47	—	—	—	—	—
	18-10-78	894	161.55	45.86	137.77	—	—	—	—	—
	25-10-78	886	148.89	45.86	131.54	—	—	—	—	—
Mudigere	2-10-78	1505	201.10	115.10	134.00	—	—	—	—	—
	9-10-78	1022	190.00	117.10	134.62	—	—	—	—	—
	16-10-78	1925	190.00	130.00	138.48	—	—	—	—	—
	23-10-78	1957	164.00	124.00	138.62	—	—	—	—	—

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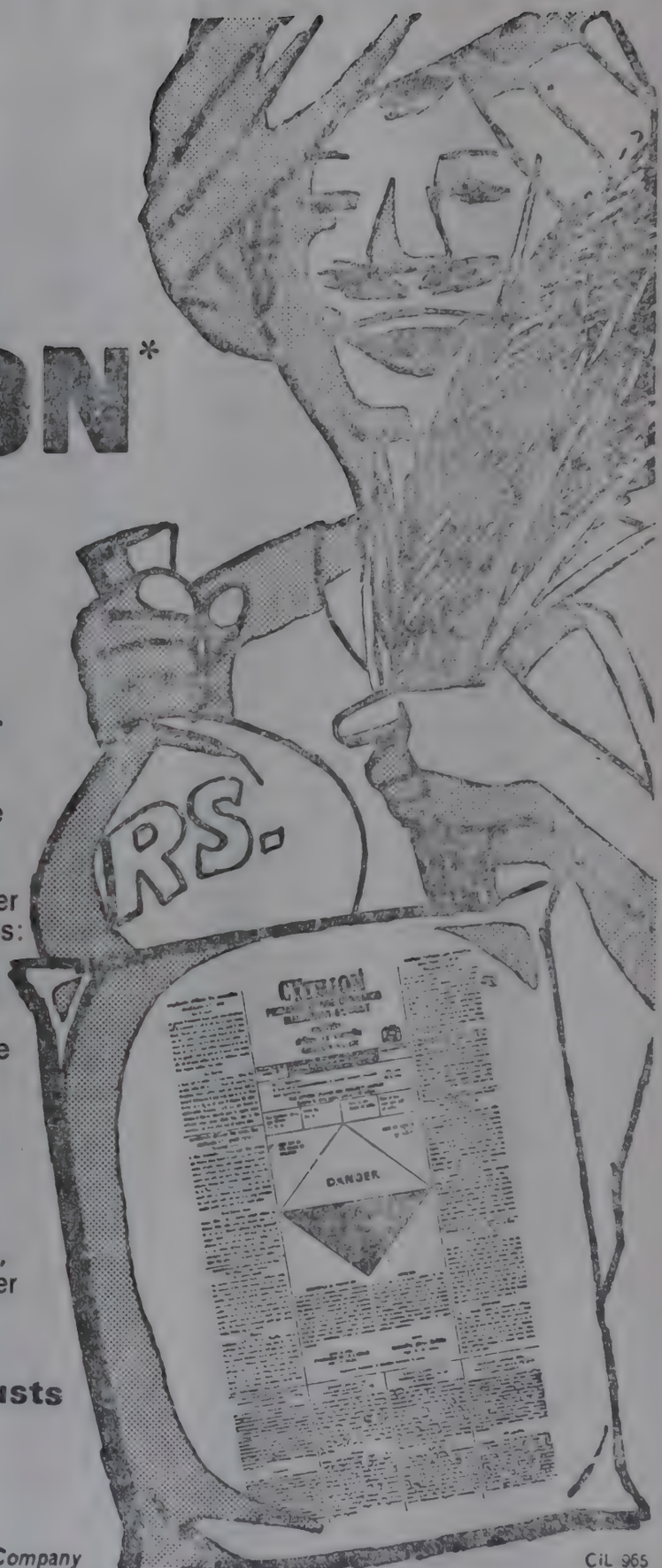

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CIL 965

Production and Exports

PRODUCTION:-

Production of cardamom for 1978-79 season is estimated as follows.

State	Production (M.T.)
Kerala	2900
Tamilnadu	300
Karnataka	800
Total	4000

SALES AND PRICES AT AUCTIONS

Centre-wise sales and weighted average prices at auctions during October 1978 and October 1977 are given below.

The sales at auctions during October 78 have gone up in all the three states compared to the sales during October 1977. In Kerala 622 M. T. were sold in October 78 against 607 M. T. during October 77. While observing the centre-wise sales in Kerala during October 78 it could be seen that though the sales at Vandanmettu were less by 72 M. T., compared to previous year, the sales at other centres in Kerala were more by 86 M. T. In Tamilnadu the sales at auction during October 78 is more or less equal to that during October 1977. However the sales in Karnataka is more by 36 M. T. during October 1978 compared to previous year.

Centre	1978 CROP OCTOBER 1978 Quantity (kgs)	Av:Price (Rs/kg)	1977 CROP OCTOBER 1977 Quantity (kgs)	Av:Price (Rs/kgs)
KERALA				
Vandanmettu	419798	199.59	491723	143.08
Santhampara	115625	182.68	57110	126.84
Udumbanchola	30030	180.26	21487	133.52
Kallar	31167	170.04	29924	119 81
Parathode	19013	182.69	—	—
Cochin	6281	184.00	7086	116.03
Total (Except Vandanmettu)	202116	180 41	115607	125 60
Total (Kerala)	621914	193.36	607330	139.75
TAMILNADU				
Pattiveeranpatti	19795	157.47	20735	105.60
Bodinayakanur	2227	152.82	—	—
Total (Tamilnadu)	22022	157.00	20735	105.60
KARNATAKA				
Saklespur	92316	144.35	66450	91.20
Mercara	6745	148 86	13662	90.37
Mangalore	8825	147 97	913	86.39
Sirsi	2979	133.30	—	—
Mudigere	6409	136.85	—	—
Total (Karnataka)	117274	144 19	81025	91.01
Grand Total (India)	761210	184.73	709090	133 18

The cumulative position of sales during the current season (August-October 78) is also encouraging. Against 1034 M. T. sold in Kerala during last year, 983 M. T, were sold during the current season. The shortage in sales at Vandanmettu is almost adjusted by the higher sales in other centres like Santhampara, Udumbanchola and Parathode. The net reduction in sales in Kerala during the current season (as on 31st October 1978) is only 52 M. T. When we consider the late crop position in Vandanmettu areas during the current season and also the higher rates of arrivals in other centres, we can expect that 1978 crop in Kerala will not be less than the crop of 1977, i e. 2900 M T In Tamilnadu also the crop is estimated to be equal to that of previous year i. e. 300 M. T. However in view of the highe

The cumulative positions of sales and prices during August-October 1978 compared to August-October 1977 are given below.

Centre	1978 CROP August - October 1978 Quantity (Kgs)	Av:Price (Rs/Kg)	1977 CROP August - October 1977 Quantity (Kgs)	Av:Price (Rs/Kgs)
KERALA				
Vandanmettu	594929	197.04	803218	138.74
Santhanpara	223884	180.44	104121	123.80
Udumban-chola	55690	179 59	47328	128.52
Kallar	74025	171.88	69559	117 02
Parathode	27635	184 31	—	—
Cochin	7336	184.92	10295	115.17
Total (Except Vandanmettu)	388570	179.05	231303	122.34
Total (Kerala)	983499	189.93	1034521	135 07
TAMILNADU				
Pttiveeranpatty	36175	156.89	40914	104.93
Bodinayakanur	3941	156.31	—	--
Total (Tamilnadu)	39116	156 83	40914	104 93
KARNATAKA				
Saklespur	127581	145 85	123322	96 46
Mercara	14799	148.20	40236	89 88
Mangalore	9924	147.89	2151	89.69
Sirsi	3303	133 71	—	—
Mudigere	8293	138.79	—	—
Total (Karnataka)	168900	145 58	165709	94 77
Grand Total (India)	1186515	182.71	1241144	128 70

sales at auctions in October 1978 in Karnataka, the total production is expected to be around 800 M. T. which is more by 100 M. T. than that of previous year.

The weighted average price fetched at Vandanmettu during October 1978 was Rs. 199.58 per Kg while the price in other centres in Kerala averaged to Rs. 180.41 per Kg. The average prices in Tamilnadu and Karnataka during October 1978 were Rs. 157.00 Per Kg and Rs. 144.19 per Kg respectively. The prices remained more or less steady during September and October 1978.

EXPORTS:

The reports received from the customs authorities indicate that 223 M. T. of cardamom valued at Rs. 4.82 crores were exported during October 1978 as against 388 M. T. valued at Rs. 6.38 crores exported during October 77. We have already received the details of 176 M. T. valued at Rs. 3.73 crores from exporters for October 1978. Exporters have been reminded to send the details of the remaining quantity.

It could be seen from the statement below that the total exports during the period April-October 78 is 883 M. T. with an earnings of Rs.16.47 crores. The exports during the same period of previous year was 1103 M. T. valued at Rs. 19.26 crores. The unit value realised during the current year is Rs. 187 per Kg as against Rs. 175 per Kg. during last year. Eventhough quantitatively there is a reduction of 220 M. T. during the current year, the shortfall in earnings is only by Rs. 2.69 crores. Considering the present higher price

(Continued on page 46)

MONTH-WISE EXPORT PERFORMANCE COMPARED TO THAT OF PREVIOUS YEAR IS GIVEN BELOW:

Months	1978-79 Quantity (Kgs)	Value (Rs)	U.Value (Rs/Kg)	1977-78 Quantity (Rs)	Value (Rs)	U.Value (Rs/Kg)
April	213782	36320584	169.90	104273	20667368	198.20
May	175184	29402200	167.84	199617	37229211	186.50
June	91808	16444841	179.12	159114	28157433	176.96
July	77581	15268945	196.81	75672	12780100	168 89
August	37857	6961521	183.89	89619	15791060	176.20
September	63638	12129628	190.60	87012	14120046	162.28
October	223091*	48164347*	215.90*	387627	63825845	164 66
Total:	882941	164692066	186.53	1102934	192571063	174.60

*Customs Report

Source: Returns furnished by exporters of cardamom.

News and Notes

Shri K. G. Nayar, Secretary Cardamom Board taking possession of the estate by lighting the Sacred lamp.

Board Acquires Estate for Research Station in Karnataka

Cardamom Board has acquired 19 hectares of cardamom estate in Saklespur, Hassan District of Karnataka State to establish regional research station of Indian Cardamom Research Institute in Karnataka. The estate is situated on the Bangalore-Mangalore Road, 5 kms from Saklespur. Research trials on all aspects of cardamom cultivation will be taken up in this regional station shortly. It may be recalled that during May 1978 the Board has acquired 42 hectares of cardamom estate in Idukki District of Kerala for establishing the main research station of Indian CardamomResearch Institute of Cardamom Board

The estate was taken possession of at a simple function by Shri K G. Nayar, Secretary, Cardamom Board lighting the sacred lamp on 23rd November 1978.

A planters' meeting was held on that day at Saklespur in which Shri N K. Ganappaiah, President, Karnataka Cardamom Growers, Association presided. In his presidential address he stressed the need for conducting research on cardamom cultivation, processing and end-uses for deriving better and scientific methods in all spheres of cardamom industry. Sri K. G. Nayar, Secretary, Cardamom Board welcomed the gathering and Shri T. D. John, Farm Manager, Cardamom Board proposed the vote of thanks.

Shri N K. Ganappaiah delivering the presidential address at the Planters' meeting in Saklespur.

Mandatory Air Freight Rates for Spices

Information has been received from the Government of India that the Ministry of Tourism & Civil Aviation have issued notification dated 13th November 1978 advising the Air India to apply a mandatory rate of Rs.6.30 per kg for air freighting shipments of food stuffs, spices and beverages from Delhi/Bombay for various specific destinations provided the weight of each shipment is 250 kgs. or above. The destinations are Dubai, Muscat, Abu Dhabi, Kuwait. Baghdad, Bahrain. Jeddah, Dhahran and Doha.

Annual Planters' Meet at Bangalore

Shri S. M. Yahya, Finance Minister, Government of Karnataka, who inaugurated the annual conference of Karnataka Planters' Association in Bangalore said that no decision affecting the plantation industry would be taken without consulting the association.

Earlier, Mr. K. A. Ayappa, Chairman, Karnataka Planters' Association in his presidential speech said that his association had maintained close liaison with the Cardamom Board, Tea Board and Rubber Board and thanked the Chairmen and Officers of the above Boards for all the help they had rendered to them.

The Finance Minister, ruling out enhancement of plantation allowance, urged coffee plantation owners to reinvest the allowance to increase the coffee crop. He hoped that the plantation owners would not deviate from the main purpose of improving the industry as a whole and would take positive step in this direction. He also said that the Government could combine with the Planters' Association in providing medical facilities for plantation workers.

Exports to Kuwait-Special Procedure Withdrawn

The special procedure of evaluation hitherto followed by the Bombay Customs in respect of shipment of cardamom to Kuwait has been withdrawn. The Board has received intimation to this effect. Readers would remember that the Board had taken up the matter with the Bombay Customs long back.

Central Minister Visits Plantations

Shri K. K. Goyal, Union State Minister for Commerce, Civil Supplies and Co-operation visited the cardamom growing areas in Idukki on the 10th and 11th December 1978. The Minister also held discussions with the various interests representing the cardamom plantation Industry at Thekkady, Cumbum, Kombai and Bodinayakanur. The representatives are understood to have expressed their appreciation for the active interest taken by the Government and the Cardamom Board for the uplift of the industry.

The Minister left for Delhi on 12th December 1978.

Hike in Marine Exports

India's exports of marine products during the first four months (April-July) of the current financial year (1978-79) soared to 25,361 tonnes valued at Rs.692.7 million from 19,234 tonnes worth Rs. 588.4 million during the corresponding period last year, marking an increase of 32 per cent in terms of quantity and 18 per cent in value. The proposed export target for 1978-79 is 73,780 tonnes valued at Rs. 2265.7 million.

Production Exports

(Continued from Page 44)

compared to previous year, the annual average export price for the financial year is expected to be not less than Rs. 190 per Kg as against Rs. 175 per Kg during last year. Thus even if the total quantity exported remains at the level of 2600 M. T., the total earnings could be maintained at the level of Rs. 50 crores during the financial year 1978–79.

In view of the anticipated higher exports during November and December, we expect a total quantity of not less than 1700 M. T. to be exported during the remaining five months of the current financial year. The average export price during this period is expected to be around Rs 200 per Kg. At this rate 1700 M. T. will bring an earnings of Rs. 34.00 crores in addition to Rs. 16 crores already achieved during the period April-October 1978. Thus in the light of present indications we hope to achieve the targetted earnings of Rs. 50 crores during the financial year 1978-79.

Seminar on Fertiliser use

The Minister for Agriculture and Irrigation, Mr. Surjit Singh Barnala, recently suggested that a system of integrated supply of plant nutrients by judicious and proper balancing of mineral fertilisers, organic manures and bio-fertilisers be evolved. Utilisation of organic wastes as fertilisers would not only result in increased production through provision of nutrients but would also help in tackling environmental problems. Inaugurating the India/FAO/NORAD seminar on the development of the complementary use of mineral fertilisers and organic materials in New Delhi recently, he pointed out that exploitation of organic waste resources and use of bio-fertilisers would also result in economising on the use of expensive mineral fertiliser.

Mr. Barnala emphasised that efforts for increasing consumption of mineral fertilisers for achieving agricultural production programmes should continue more vigorously, He said Agricultural universities and other research institutions could contribute a lot by undertaking research on enriching compost with cheap sources of plant nutrients and bulk reduction studies. Field trials to ascertain the advantages of enriched product and of studies in regard to combined use of organics and inorganics should be undertaken. Much more serious efforts were required for exploiting the full potential of organic waste resources in the country. Green manuring had a definite scope in areas where one of the seasons was not utilised for growing a crop.

Growers Contribute to PM's Fund

Shri. S. G. Sundaram, Chairman, Cardamom Board on behalf of the cardamom growers presented a cheque for Rs. 1 lakh towards the Prime Ministers Flood Relief Fund to Shri. K. K. Goyal Union State Minister for Commerce, civil supplies and Co-operation at a function in Bodinayakanur. Shri. K. P. Thilakar, Vice-president, Bodinayakanur Piranthiya Thenninthiya Ela Vivasayigal Sangam presided over the function. S/Shri. K. S. Scaria (Jr). T. K. S. Manoharan; V. Narayanaswamy ... (members, Cardamom Board), representatives of major auctioneers like Cardamom Marketing Corporation, Vandanmettu, Pampupara Auction Co. Vandanmettu etc and other prominent planters and traders were present on the occasion.

Earlier Shri. Subbiah, Director, Bodinayakanur Piranthiya Thenninthiya Ela Vivasayigal Sangam Welcomed the guests.

Cardamom Board Reconstituted

The Cardamom Board has been reconstituted by the Government of India for a period of three years.

S/Shri T. K. S. Manoharan, Cumbum; K. S. Skaria Jr.; Pottamkulam, Koottikkal and J. Thomas, Chairman, M/s. A. V. Thomas & Co, Madras represent large growers of Cardamom and S/Shri H. Ajmal Khan, Seika Estate, Bodinayakanur K. P Purushothaman Nair, Padmavilasam Estate, Vandanmettu and P. P. Ponnappa, Kodamaloor Estate, Virajpet represent small growers on the reconstituted Board.

The interests of the Cardamom trade are represented by S/Shri V Narayanaswamy, M/s. Spices Agencies, Bodinayakanur and J. M. Gandhi, M/s. Gandhi Sons, Bombay.

S/Shri S. Mahadeva Iyer, Deputy Director, Ministry of Commerce; D. V. K. Chari, Controller of Accounts, Finance Division of the Ministry of Commerce and Dr. C. K. George, Director, Cocoa, Arecanut and Spices Development, Calicut represent the Ministries of Commerce, Finance and Agriculture respectively. S/Shri Henry Austin M. P. and Jagajit Singh Anand M.P. elected by the Lok Sabha and Reghunath Singh Verma M P. elected by the Rajya Sabha and K. V. George, Director of Cardamom Development, Cardamom Board continue as members of the Board. The Additional Director of Agriculture, Kerala State has been nominated as the representative of the Government of Kerala on the Cardamom Board

Representatives of the Governments of Karnataka and Tamilnadu and representatives of labour and other interests are expected to be nominated shortly.

Shri S. G. Sundaram, I. A. S. continues to hold charge of Chairman Cardamom Board. □

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CULTIVATION OPERATIONS

JANUARY

	South West Monsoon areas (Kerala-Tamilnadu)	North East Monsoon areas (Tamilnadu)	South West Monsoon areas (Karnataka)
Primary Nursery	Routine Watering-removal of mulch if germination is noticed, followed by erection of shade pandals over the beds.	Sowing of seed in lines on the beds, spreading a thin layer of jungle soil-mulching with potha grass and regular watering.	Regular watering and plant protection measures-weeding-collection of decomposed farm yard manure or jungle soil and cleaning.
Secondary Nursery	Third round weeding and mulching-second round manuring, routine watering and plant protection measures.	Watering as required-plant protection measures	Routine watering, plant protection, weeding, collection of jungle soil and clearing.
Starting of New Pntalations	Third round weeding	No work	Mulching with dried leaves.
Maintenance of Plantations	Fifth round crop harvest-thrips control-providing foot paths. Third round weeding continued and completed.	Fifth round harvest. Thrips control.	Last round harvest completed-curing. storage or transport to market-Watch and Ward-Mulchnig with dry leaves

FEBRUARY

Primary Nursery	Routine watering-removal of mulch and erection of shade pandals over the beds continued-first round weeding, earthing up and repair of beds-spraying Copper fungicides for controlling diseases	Watering regularly-removing the mulch if germination is noticed, followed by erection of pandals.	Routine watering and plant protection - weeding-spreading dried farm yard manure or jungle soil at the rate of two baskets per bed-applying steamed animal meal in between rows.
Secondary Nursery	Routine watering and plant protection measures - repair of shade pandals.	Routine watering-manuring-mulching - plant protection measures	Routine watering-plant protection and weeding-spread jungle soil at the rate of two baskets per bed and apply steamed animal meal.
Starting of New Plantations	Clearing forest under growth -forming drainage channels in water logged areas-tracing and laying footpaths and roads.	Clearing forest under growth in the set for new planting, works connected with tracing and forming footpaths and roads, forming drainage channels in low lying water logged areas started.	Clearing forest under growth and fencing area proposed for planting.
Maintenance of Plantations	Thrips control-second round of footpath maintenance, clearing drainage channels etc. last round harvest started - tracing, uprooting and destruction of Katte affected plants.	Last round harvest – thrips control-third round weeding and earthing up of plants. collection of fire woods.	Mulching with dried leaves continued -irrigation depending on feasibility,

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